



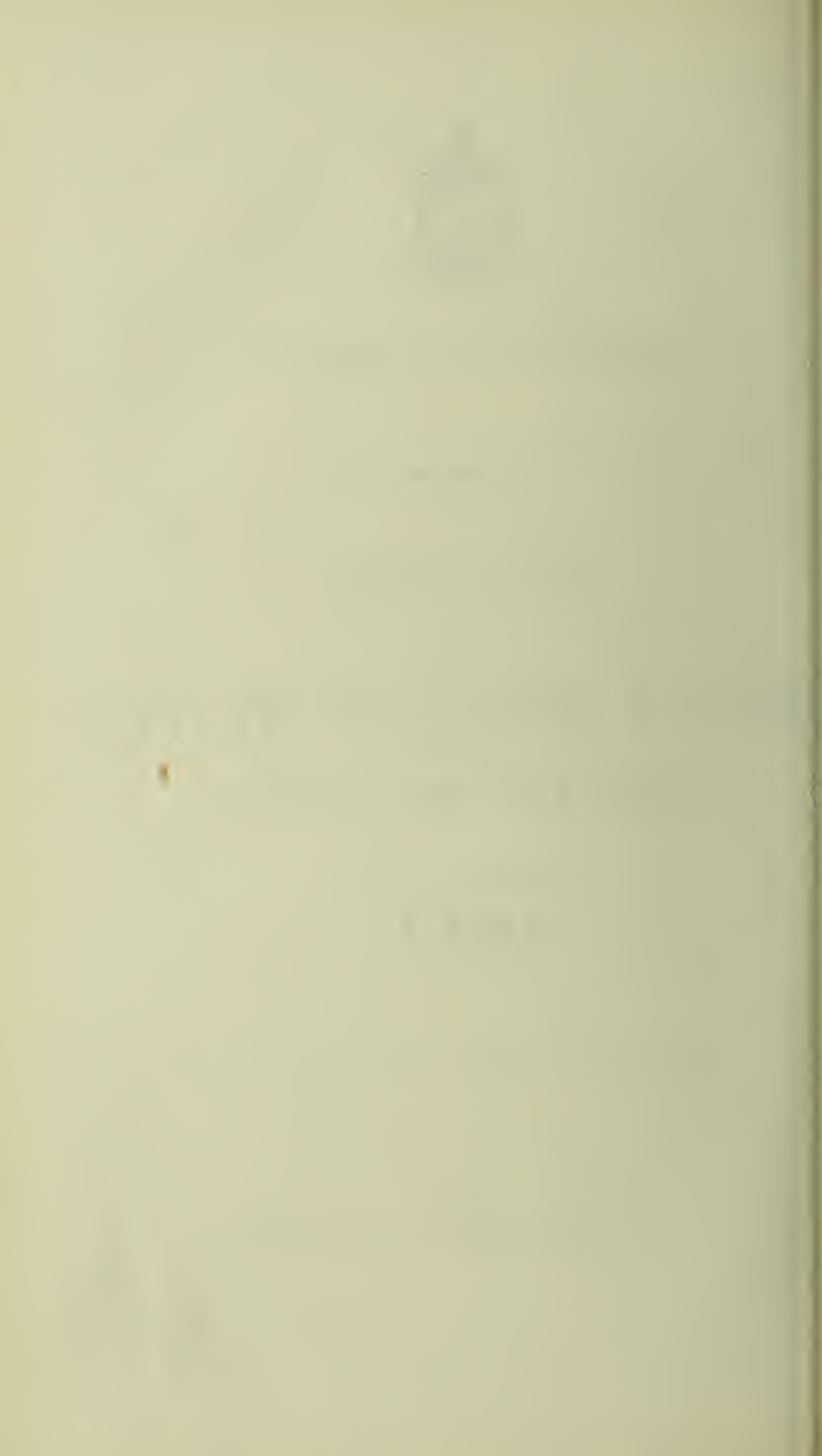
CORPORATION OF GLASGOW

REPORT
OF THE
MEDICAL OFFICER OF HEALTH
CITY OF GLASGOW

1933

ORDERED BY THE COMMITTEE ON HEALTH TO BE PRINTED

GLASGOW
ROBERT ANDERSON & SONS, LTD., 142 WEST NILE STREET



PREFACE

It is customary to preface the Annual Report by a brief reference to some of its principal contents.

Population.—This is estimated at 1,103,357 persons, a figure which is based on the number of inhabited houses, 265,146, as returned by the City Assessor. The natural increase of the population, i.e., excess of births over deaths, was 6,614. The movements of the population described in the Report indicate a continuance of the thinning out of houses and of population in the central wards of the city, increases of both in the outer wards of the city, and a continued overflow into adjacent county areas as the general result of housing operations, including demolition of insanitary properties. Reference has been made in previous Reports to the factors responsible for the comparatively small growth of the population within the city boundary in recent years (3·5 per cent. during the ten years between the census of 1921 and that of 1931). In Glasgow, as elsewhere, the figure representing the excess of births over deaths is becoming smaller owing to the decline in the birth-rate, which was 19·36 for the year under review, the lowest yet recorded for the city. It is now one-half of the rate prevailing fifty years ago. As regards birth-rates, the city wards vary in magnitude from Mile-end with 30·1 per thousand of the population to 8·6 for Langside Ward.

Vital Statistics.—The general death-rate for the city was 13·4 per thousand of the population, which is slightly less than the figure for 1932, i.e., 14·7, and is the lowest on record. This comparatively low death-rate may be attributed to the agreeable weather conditions prevailing during the greater part of the year, which influenced favourably the mortality from many causes, especially that due to respiratory diseases. The features of the vital statistics may be summarised as follows:—(1) The mortality from pneumonia and bronchitis was considerably less than that to which the city is accustomed during the winter; (2) the lessened mortality from certain infections and other diseases was due to a relative absence of pneumonia as a complication; (3) measles departed from its usual epidemic rhythm, and was almost entirely absent during the year; and (4) the good weather conditions, especially towards the close of the year, were favourable to aged people, as reflected in a lowered mortality rate from senile causes of death.

As regards individual infectious diseases, the mortality rate from scarlet fever, in spite of its continued heavy prevalence, was lower, being 75 as against 93 per million persons, while diphtheria was also less fatal. The mortality from pulmonary tuberculosis was 824 per million, compared with 889 in 1932. On one occasion only has the mortality been less than this, i.e., in 1930, when the rate was 805. The death-rate of the non-pulmonary forms of the disease attained a new low level, the rate being 246 per million of the population, compared with 269 for the preceding year. In fact, since 1930 there has been a reduction of almost 30 per cent. in the number of deaths from these non-pulmonary forms. Historically, non-pulmonary tuberculosis in Glasgow was stationary between 1890 and 1910, since when it has progressively declined at an accelerated pace, a feature which applies not only to the disease as a whole, but also to each of the forms it assumes. The outstanding feature is the relatively greater and more rapid fall in abdominal tuberculosis in relation to "other forms" which have declined to a lesser though considerable extent. A suggestive phenomenon is that this reduction has been most evident in Glasgow and in the large towns of Scotland. The figures for abdominal tuberculosis indicate that the reduced opportunity for children to contract severe bovine infections has been most obvious in large towns, particularly in Glasgow.

Regional Certifying Clinic for the Blind.—This Regional Clinic is conducted under the auspices of the Joint-Committee for the South-West of Scotland for the Administration of the Blind Persons Act. It was the first of its kind to be established, and serves a population of 2,700,000 persons, of whom about 4,200 are on the register of blind persons. One of its features is the adoption of the board system, under which a doubtful or difficult case is examined by two specialists independently before the case is assessed, a principle which is regarded as invaluable in certain types of case. In July a new medical certificate form, issued by the Department of Health, was brought into use, based on one previously in operation in the Glasgow clinic. This will enable uniformity in the collection of information about the blind to be attained throughout the country. Dr. C. M. Smith has carried out a further investigation of the causes of blindness (which will be separately reported), with special reference to the administrative work under the Blind Persons Act, and has communicated his results to the Joint-Committee in charge of the scheme. The problems at present engaging the attention of the Joint-Committee largely centre round the administration of the Asylum for the Blind and its transference from Castle Street to a site at Possilpark. The relationship between the Joint-Committee and the Mission to the Outdoor Blind is also under

review, while matters concerning hostel accommodation, untrainable, and homeless blind persons are also receiving attention.

Child Welfare.—The infant mortality rate was 96 per thousand births, as compared with 112 for the previous year, and was the second lowest recorded for the city. The favourable weather of 1933 coincided with an almost complete absence of measles and a comparatively low incidence of whooping-cough, while pneumonia, the most fatal of all diseases to child life apart from diseases of immaturity, was only prevalent for a brief period at the beginning of the year. Pneumonia was almost entirely absent towards the end of the year, the period during which it usually causes a heavy mortality, especially when cold weather is accompanied by fog. The various child welfare centres continued to have full attendances, although these are being to some extent affected by the fall in the birth-rate. Certain rearrangements of individual clinics were made during the year in accordance with experience. A new combined clinic to serve the purposes of maternity and child welfare, treatment of school children, and outdoor medical services is under construction at Rhymer Street, while a proposed new clinic for similar objects has been designed and approved to take the place of the centre at Adelphi Street.

That children have a much better chance of survival under modern conditions may be deduced from the following statistical table:—

AVERAGE ANNUAL DEATH-RATE PER MILLION PERSONS LIVING
IN AGE-GROUPS.

MALES.						
Year.	1870-2.	1880-2.	1889-91.	1900-2.	1910-12.	1930-2.
0	106,911	87,238	83,984	73,278	—	40,214
5	15,146	13,422	8,370	6,439	—	3,330
10	7,795	6,911	4,582	3,608	—	2,149
15	10,944	9,074	7,982	6,244	—	3,626
FEMALES.						
0	98,084	78,015	73,838	61,681	—	32,771
5	14,965	12,206	8,096	7,104	—	2,754
10	7,581	6,143	4,559	3,762	—	2,205
15	11,666	9,145	8,036	5,548	—	3,423

This table illustrates the salutary influence on child life of modern social, environmental, and preventive factors generally. It would be difficult to place a precise value on the different contributory causes, but apart from the diminution in certain specific diseases, such as epidemic diarrhoea, rickets, and other affections, sanitation, housing, nutrition, and education have each

played an important part. The decline in the birth-rate has also had a material influence in this direction. Although a very decided reduction has taken place in the death-rate among children from 1 to 5 years, the commoner infectious diseases—measles, whooping-cough, and pneumonia—continue to be the main causes of death. These affections, in proportion to their prevalence and severity, give rise to certain chronic or disabling lung conditions in young children. Their incidence among pre-school children has raised a number of special administrative problems.

Ante-Natal Consultations.—A further increase has taken place in the number of expectant mothers seeking ante-natal advice at the various welfare centres. The increase last year is regarded as due to the better appreciation by expectant mothers themselves of the benefits afforded by these clinics. The precise position of the ante-natal service in a maternity scheme has not yet been determined. These clinics may be regarded as undergoing a process of evolution, and the final form they may ultimately assume can only be settled in the light of further experience.

Maternal Welfare.—Reference may again be made to the very difficult questions concerning the problems of maternal mortality and morbidity. The experience of the year under review showed that the maternal mortality rate, 5·9 per thousand births, was considerably less than the figure for 1932, i.e., 7·9, and is the same as that for Scotland generally. Whether this represents a real and permanent fall it is impossible to say. The reduction is accounted for by a fall in accidents of pregnancy, toxæmias, and other puerperal diseases. The tendency for certain causes of maternal death to decline in recent years may be noted, although the data should be interpreted with caution as maternal mortality has been intractable and liable to fluctuation. It may be suggested, however, that the minute attention now being paid to obstetrics is influencing the figures along with the greatly increased practice of ante-natal care, although much of this is, for various reasons, of an imperfect kind. It may also be pointed out that correct ascertainment of causes of maternal death has reached a high level of accuracy, so that really comparable information is now available for yearly comparison.

Confinements are taking place to an increasing extent in maternity institutions. The proportion of births occurring in institutions has increased from 16 to 27 per cent. during the past five years, while fewer births are attended at home by medical practitioners or by practising midwives,

Abortions.—A growing demand is being made on hospital accommodation for the treatment of abortions. There is no doubt that premature termination of pregnancy is being increasingly practised. For instance, there were admitted to Corporation Hospitals 294 cases of abortion in 1931, 597 in 1932, 709 in 1933; and to the Royal Maternity Hospital 707 in 1931, 529 in 1932, and 651 in 1933. In addition, 83 septic abortions were admitted to Robroyston Hospital and 37 to Belvidere during the year.

Infectious Diseases.—The principal feature of the year was the continued high incidence of scarlet fever, although the total number of cases registered (8,378) was less than the figure (9,158) for the preceding year. The type was mild though highly infectious, with a case mortality rate of one per cent. The pressure on hospital accommodation was very great during the whole year, and 22 per cent. of patients were not removed. The policy of home treatment is being adopted as far as possible, and a special investigation is being made into the incidence of scarlet fever in relation to hospital admission and home treatment. Enteric infections have been low in incidence for several years, and what may be termed the residual amount of infection in a large urban community is the subject of a special enquiry by Dr. C. M. Smith, contained in the text of the report. The delay in the occurrence of measles in a large industrial centre in this latitude is of more than passing interest in view of the heavy mortality caused by measles and its complications during the winter months.

Tuberculosis.—The institutional provision remains unaltered, except that ten beds in Robroyston Hospital are now devoted to the treatment of cases of abortion in co-operation with the Royal Maternity Hospital. Efforts are continuing towards greater rationalization of the tuberculosis scheme in order to secure appropriate treatment for those who most require it, by making the best possible use of the accommodation in relation to the duration of residence. Efficient and economical administration depends upon careful and competent pre-admission examination of patients, and on a subsequent period of treatment carefully proportioned to the necessities of the individual case. This ideal is difficult to realise in practice because the duration of residence depends not only on the prospect of arrest or improvement by specific treatment, but also on the hospital supervision of individual patients and their degree of infectivity. Improved housing conditions are influencing institutional accommodation by enabling isolation at home to be carried out, especially in the more chronic types of patients, after preliminary treatment in a sanatorium or hospital. Another feature of considerable value is a judicious measure of rehousing families where a member is

suffering from open tuberculosis. These movements should in the course of time materially reduce the amount of accommodation devoted purely to purposes of segregation.

The facilities for the modern treatment of phthisis by artificial pneumothorax have been greatly assisted by the establishment of a central "refill" station at Baird Street Auxiliary Hospital, which was set in operation during the year. The arrangements for the treatment of non-pulmonary tuberculosis are complete, and a full account of the results obtained at Mearns Kirk Hospital for Children is contained in the Report. This institution is now functioning as the principal orthopaedic centre of the Corporation, and works in close association with the special clinic at Ashley Street for pre-admission examination and after-care of child patients in collaboration with the tuberculosis dispensaries.

Veneral Diseases.—The two points to be noted are the continued diminution in the number of male cases of early syphilis and the continuance of the upward trend of male patients with acute gonorrhœa. During the past few years patients with syphilis have attended more regularly and there are fewer defaulters. Dr. W. R. Snodgrass has completed a comprehensive investigation into the results of modern methods of treatment of the venereal diseases.

Housing.—This section reviews the development of housing progress in the city, along with the social movements which are related to the occupancy of houses and the public health results of housing operations. Dr. W. G. Clark describes the work undertaken mainly in respect of slum clearance and rehousing schemes. He reviews the results of rehousing and deals with a number of matters of special interest, such as the value of the "intermediate" house and of rehousing schemes in relation to the relief of overcrowding, the migration of families from housing schemes, the operation of the measures for rehousing families in which a member is suffering from open tuberculosis. The results of the scheme of supervision of tenants removed from uninhabitable to new houses and the special measures taken to prevent vermin infestation are reviewed by Dr. W. C. Gunn.

Food and Drugs.—The new British Pharmacopœia came into operation during the year, and it has been found that some little time will be required before drugs are generally compounded in accordance with the new standards. The presence of high quantities of lead in imported tinned sardines gave rise to some difficulty, but this matter has been effectively taken up by the Government. The Preservatives in Food Regulations are working on the whole fairly satisfactorily. With regard to ordinary market milk, 70 per cent. of samples were, in relation to bacteria

count, equivalent to Grade "A" quality. While further progress towards a uniformly high standard of cleanliness in production is desirable, this result is not unsatisfactory considering the dry and warm weather prevailing during several of the summer months. The sale of Certified and Grade "A" (Tuberculin Tested) milk continues at a comparatively low level in the city, little more than 1,000 gallons of the latter being sold out of a daily total of approximately 65,000 gallons.

Air Purification.—An analysis is given by Mr. F. W. Harris, the Corporation Chemist, of the ultra-violet radiation records taken at certain sites in the centre of the city, at Robroyston Hospital on the outskirts, at St. Andrew's Hall, and at Glasgow Cross Station. As a result of these observations, Mr. Harris concludes that 5 to 5.5 units on the empirical scale may be accepted as representing the maximum possible intensity of ultra-violet rays in Glasgow. The results obtained at the various points mentioned above are tabulated, and afford striking evidence of the effectiveness of the barrier to the ultra-violet rays presented by smoke pollution. These investigations are being continued, and an observation station has been established at Mearnskirk Hospital, seven miles from the centre of the city. In the section on smoke abatement, reference is made to the continued success of the classes in Smoke Abatement, Boiler Efficiency, and Furnace Management conducted under the joint-auspices of the Scottish Branch of the National Smoke Abatement Society and of the Corporation of Glasgow.

Sanitation.—The reports of the divisional sanitary inspectors are descriptive of a large variety of activities. The modern functions of a sanitary inspector are largely concerned with the house and its environment, and the reports describe various housing problems in the special districts. Recent housing progress, especially slum-clearance schemes, has considerably eased the more intensive problems of sanitary supervision and the removal of nuisances. On the other hand, problems of environment have widened out in several directions. The public are more sensitive to their surroundings, they demand higher standards, complain much more readily than they did formerly, and often raise problems of considerable difficulty. The most important and most fruitful phase of sanitation in modern times is that which is concerned with domestic life—domestic sanitation, cleanliness, mode of occupancy, housing standards, education, hygiene, &c. Efforts in this direction are essential to modern progress in public health.

General Hospitals.—The work of the general hospitals has been fully reviewed in previous Reports. The principal feature

of 1933 was the continued high demand on hospital beds, in great part owing to the economic situation. Some further progress has been made in general reorganisation so as to enable the hospitals to function to their maximum capacity as such. The progress being made by the Public Assistance Department with the alterations at the Southern General Hospital and the transference of Crookston Poorhouse to the Corporation will have a decisive effect in relieving the principal hospitals of chronic and infirm types of case which tend to block their accommodation. Part of the maternity accommodation at the Western District Hospital was reconstructed during the year, and a similar reconstruction is contemplated as regards the Eastern District Hospital. Reconstruction proposals have also been approved for Stobhill Hospital in order to improve and expand the accommodation for the nursing staff.

Mental Service.—The Report points out the extreme utility of the psychiatric units at the general hospitals and the increasing amount of work they are called upon to perform. As regards the mental hospitals, a full report has been prepared on the farms at each of these institutions which are undergoing further development as dairy farms.

Infectious Disease Hospitals.—The reports of the Superintendents of the infectious diseases hospitals are incorporated. All these institutions were working at high pressure during the year, and the proposed new hospital at Cowglen of 350 beds, to replace Shieldhall and other smaller institutions, should enable a sufficient margin of accommodation to be maintained in order to permit of certain overdue rearrangements in the other principal infectious disease hospitals.

The foregoing paragraphs are intended to call attention to certain selected features of public health work and administration. In presenting this Report, I desire to acknowledge the services of the various contributors. Mr. William M'Kean, Assistant Secretary to the Department, has, as usual, given much time and care to its preparation and arrangement, while the services of various members of the staff should receive special mention.

A. S. M. MACGREGOR,
Medical Officer of Health.

PUBLIC HEALTH DEPARTMENT,
GLASGOW, 10th September, 1934.

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REPORT

OF THE

MEDICAL OFFICER OF HEALTH

FOR THE YEAR

1933

PART I

SECTION I.

POPULATION &c.

The estimated population as at the middle of 1933 is 1,103,357, compared with 1,095,263 for the preceding year. The increase indicated is 8,094, while the natural increase, i.e., the excess of births over deaths, was 6,614. Formerly the excess of births over deaths has usually been greater than the estimated increase in the population, the adverse difference being generally regarded as due to emigration. During the last year or two, however, the flow of emigration has practically ceased, and a reverse movement is taking place, for the excess of immigration to the country as a whole last year was about 20,000.

Information as to emigration for any particular district is not available, and it would be impossible, without a yearly census, to ascertain the degree of movement caused by the overflow of the population into adjacent districts or elsewhere. It has always been the practice of the Department to estimate population on the number of inhabited houses, based on an annual survey made by the City Assessor for rating purposes. The estimated municipal ward populations are also based on the inhabited houses, and here the principle affords a ready and more or less accurate method of comparing the rapid changes which have taken place during the post-war years.

Ward Population.—In Table I in the Appendix is given the distribution of the population in the various municipal wards of the City. The largest population in any one ward for 1932 was 58,304 in Whiteinch, but in the present report this ward has been divided into two, the new part being known as Yoker and Knightswood, which has now an estimated population of 26,734, while the remaining portion, Whiteinch, has a population of 32,788. The wards with the largest populations are now Gorbals with 45,439, Ruchill with 42,948, Provan with 41,888, and Shettleston and Tollcross with 41,251. With the exception of Gorbals, all these wards are situated on the periphery of the City, in which building operations have been active during recent years.

The largest increase of population since the previous year occurs in Pollokshields Ward, where the addition is 3,069. In the same district, to the south-west of the City, there is an increase of 2,405 in Fairfield. In both instances the increases are due to the building activities by the Corporation and by private enterprise. The latter is mostly responsible for the increase of 1,908 in Cathcart and 1,092 in Kelvinside, and the former is largely responsible for an increase of 1,125 in Pollokshaws. Smaller increases of less than 1,000 persons have occurred in 12 other wards.

The greatest decrease, 565, took place in Exchange, and this is followed by 545 in both Blythswood and Kingston, 528 in Calton, and 421 in Gorbals. These, and other decreases, are mostly due to the closing of uninhabitable houses under the Housing Acts.

Institutional Population.—A special census of persons in institutions as at the end of June shows that there were 32,652 inmates in hospitals, infirmaries, hotels, lodging-houses, &c., compared with 31,917 in 1932. The largest increase in any one ward occurred in Pollokshields, which has now an institutional population of 3,214, compared with 1,812 in the preceding year, the increase, 1,402, being almost entirely due to the number of inmates in Nazareth Home.

Acreage.—The acreage of the City, 30,046, is the same as that for the preceding year. The last change was an increase of 535, which took place at the end of 1931, and was recorded in the Report for 1932. The acreage of Whiteinch Ward, which was formerly 2,696, is now reduced to 1,266. The remainder, 1,430, forms the ward of Yoker and Knightswood. The largest ward is still Pollokshields, 4,678 acres, followed by Springburn with 2,748 and Pollokshaws with 1,847.

Density.—With the increase in the estimated population for this year, the density is now 37 persons per acre, compared with 36 in 1932. The lowest ward density is 7 in Pollokshields, and the highest 193 in Woodside. Other low densities are 9 in Springburn, 13 in Pollokshaws, and 19 in Yoker and Knightswood; other high densities are 180 in Gorbals, 154 in Townhead, and 145 in North Kelvin. The densities in all the municipal wards are given in Table I in the Appendix.

Inhabited and Empty Houses.—In Table II in the Appendix the number of inhabited and empty houses in each municipal ward are given according to a return supplied by the City Assessor, along with a comparison of the former with the respective numbers for the preceding year. The inhabited houses numbered 265,146, an increase of 1,825 on the corresponding number returned for the preceding year. The largest increase is 583 in Fairfield, which is followed by 526 in Cathcart and 435 in Pollokshields, while other large increases have taken place in Kelvinside, Pollokshaws, and Ruchill. Decreases are greatest in wards in which operations for slum clearance and demolition of uninhabitable houses have been most actively carried on, namely, in Provan with a reduction of 227, Calton with 198, Kingston with 124, and Gorbals with 101.

There are now in the City 38,057 one-apartment occupied houses and 113,257 two-apartment houses. These show decreases of 174 and 229 respectively since the middle of the preceding year. There were increases of 1,434 in occupied three-apartment houses and 1,179 in houses of four apartments. Occupied houses of larger size were fewer by 385.

The following comparison with the number of occupied houses as at Whitsunday, 1927, after the extension of the boundaries in 1926, shows the results of closing uninhabitable houses of small size and the increase in three and four-apartment houses. The improvement has probably been greater than is indicated by the figures because of the tendency for houses of larger size in certain areas to be let as service-flats:—

SIZE OF HOUSE.

APARTMENTS.

Year.	One.	Two.	Three.	Four.	Five and Over.	Total.
1927	42,118	114,732	50,743	17,995	21,931	247,519
1933	38,057	113,257	65,427	25,984	22,421	265,146

At Whitsunday, 1933, the number of unoccupied houses was 2,813, compared with 2,231 for the preceding year and 1,917 in 1931. The number of empty houses in each municipal ward is given in the Appendix, Table II. The largest number in any

one ward is 326 in Park Ward, followed by Sandyford with 209, while the respective numbers in Kelvinside and Pollokshields are 185 and 184. In these four wards there are 552 empty houses of five and more apartments, out of a total for the City of 1,293.

The following summary shows the number of empty houses according to size returned for recent years as compared with the pre-war year 1913:—

NUMBER OF UNOCCUPIED HOUSES CLASSIFIED ACCORDING
TO NUMBER OF APARTMENTS.

	Old City.		Extended City.			
	1913	1921	1930	1931	1932	1933.
One Apartment,	4,169	33	204	154	132	91
Two Apartments,	9,762	17	324	155	153	147
Three „	2,731	9	494	263	295	453
Four „	954	8	498	443	559	829
Five „ and up	1,094	76	759	902	1,092	1,293
	18,710	143	2,279	1,917	2,231	2,813

Dean of Guild Linings.—Post-war house-building activity is indicated in Table III in the Appendix, which contains a summary of the numbers of linings granted by the Dean of Guild Court for each year to 31st August. During the past year 5,637 linings were issued, 270 for two-apartment houses, 1,845 for three-apartment, and 3,162 for four-apartment houses, the balance being for houses of larger size. Although the total number of linings granted last year was exceeded in 1926 and again in 1928, the feature of the present return is the large proportion of four-apartment houses. This is probably due to the concentration by private builders at the present time on the small four-apartment and kitchenette bungalow type situated in housing schemes on the outskirts of the City.

METEOROLOGY.

The year 1933 was exceptionally dry. In the last four months only 6·41 inches of rain were recorded. This experience was general throughout the country. In fact the British Isles had the lowest rainfall since 1870, with the exception of 1887.

In Glasgow the total rainfall was 29·17 inches, compared with 42·98 for the preceding year and an average of 43·90 for the past ten years, 1923-1932. This was the lowest rainfall registered in the City since 1905, which had 28·70 inches. The lowest recorded at Springburn Park since the returns were started in 1897 was 25·13 inches in 1902. Rain was registered on only 203 days, compared with 223 in the preceding year and 251 in 1931. This figure is the lowest since 1919, when rain fell on 202 days.

The average temperature, 48·4, was higher than that of any of the preceding ten years, although the variation is not great, the lowest being 46·1 in 1924. The maximum temperature of 87°F. was recorded in July, and the minimum, 20°F., in January. The year generally was also bright and sunny, especially during the spring and autumn months. The total hours of bright sunshine recorded numbered 1,255, a record which has not been exceeded during the past ten years, the average of which period was 1,114 hours.

HEALTH LECTURES.

Central Health Lectures.—The Health Committee continued to co-operate with the Glasgow Burgh Insurance Committee, the Scottish Committee, and the Glasgow Branch of the British Social Hygiene Council in organising courses of lectures on health subjects of interest to the public generally, and especially to those interested in welfare and social work. A Central Course of four lectures was arranged, at which some 3,350 persons attended:—

Date.	Subject.	Lecturer.	Estimated Attendance.
Nov. 21—	"Sex Hygiene in Relation to Venereal Disease,"	Dr. T. Drummond Shiels,	1,000
Dec. 12—	"Health and Comfort in the Home,"	Professor J. R. Currie,	700
Feb. 6—	"The Poisoned Hand—Septic Injuries: Cause and Cure,"	Professor Arch. Young,	800
Mar. 13—	"Heredity—Recent Researches in Relation to Health," ...	Professor F. A. E. Crew,	850

District Lectures.—The following district health lectures were undertaken by members of the staff of the Department, who, in addition, gave lectures or talks on about 120 occasions to local organisations, such as trade union societies, welfare guilds, church guilds, &c. The following are the particulars of the District Health Lectures organised by the committee:—

Date.	Where held.	Lecture.	Estimated Attendance.
Oct. 26—	Bridgeton Public Hall,	"Pneumonia," by Dr. C. M. Smith,	450
Mar. 6—	South Govan Public Hall.	"Sex Hygiene and Venereal Disease," by Dr. W. G. Clark,	700
Mar. 21—	Shettleston Public Hall,	"The Health of the Child and the Prevention of Rickets," by Dr. Margaret Gibson,	200

At all these lecture films of an educational nature and on health subjects were shown.

LEGISLATION.

During the year the following Acts of Parliament and Regulations, &c., dealing directly with Public Health or having a bearing thereon came into operation:—

ACTS OF PARLIAMENT, 1933.

Slaughter of Animals Act, 1933.—Provides for the humane and scientific slaughter of animals in abattoirs and knackers' yards.

Housing (Financial Provisions) Scotland Act, 1933.—Provides for the reduction of the subsidies payable to Local Authorities, &c.

Pharmacy and Poisons Act, 1933.—Replaces Acts of 1868 and 1908, and additional control of Poisons.

Rent and Mortgage Interest Restrictions (Amendment) Act, 1933.—Amends and continues previous Acts.

CIRCULARS, ORDERS, REGULATIONS, &c., ISSUED DURING 1933.

Welfare of the Blind.

Circular No. 30, dated 28th March, 1933.—Registration of Blind Persons.

Circular No. 32, dated 17th May, 1933.—Medical Certification of Blindness.

Maternity and Child Welfare.—Circular No. 38, dated 23rd January, 1933.—Maternal Morbidity and Mortality.

Infectious Disease.—Diphtheria—Memo. No. 1/M, dated February, 1933.—Production of Artificial Immunity.

Tuberculosis.—Circular No. I.D.40, dated 8th December, 1933.—Residential Treatment and other Services relating to Tuberculous ex-Service Men.

Venereal Diseases.—Circular No. 41, dated 30th December, 1933.—Approved Arseno-benzene Compounds.

Port Sanitary Authorities.—Circular No. I.D.38, dated 30th September, 1933.—Port Sanitary Regulations (Scotland), 1933: Charges for Deratisation Certificates and Deratisation Exemption Certificates.

Aliens.—Circular No. I.D.128,522/2.—Medical Inspection of Aliens.

Housing and Town Planning.

Circular No. 51, dated 3rd February, 1933.—State-aided Housing Schemes: Class of Tenant.

Circular No. 53, dated 29th March, 1933.—Town and Country Planning (Scotland) Act, 1932.

Circular No. 55, dated 20th May, 1933.—Housing, Town Planning, &c. (Scotland) Act, 1919: Financial Assistance Regulations.

Circular No. 56, dated 31st May, 1933.—Town and Country Planning: The Town and Country Planning (General Interim Development) Order (Scotland), 1933.

Circular No. 58, dated 30th May, 1933.—Housing: Financial Provisions (Scotland) Act, 1933.

Food.

Public Health (Imported Food) Amendment Regulations (Scotland).—No. 403/S.19, dated 28th April, 1933.—Prohibited Meat: Conditionally Admissible Meat.

Circular No. 35, dated 30th August, 1933; Circular No. 208,127/4, dated 21st September, 1933; Circular No. 208,127/5, dated 14th December, 1933.—Public Health (Imported Food) Regulations (Scotland), 1932, and Public Health (Imported Food) Amendment Regulations (Scotland), 1933: Description of Certificates, Labels, Marks, and Stamps.

BLIND PERSONS ACT, 1920.

MEDICAL CERTIFICATION OF BLIND PERSONS IN SOUTH-WEST OF SCOTLAND.

The work of the Regional Certifying Blind Clinic has been continued during the year, and the clinic has again been found to perform an indispensable function in connection with the administration of the welfare of the blind. The only change effected that calls for mention was that in July the medical certificate form issued by the Department of Health for Scotland was brought into use. This form was based on one previously in use in the Glasgow Clinic.

Work of the Regional Clinic.—During the year there were examined for the first time 557 applicants at the clinic and 95 at home, a total of 652 persons. In addition, 176 candidates were re-examined, making for the year a total of 828 cases examined. In 1932 there were examined 711, which, with 145 re-examinations, made a total of 856 cases examined. Thus, compared with the previous year, there was in 1933 a fall in the number of

applicants examined for the first time, while the numbers re-examined were slightly increased. Of the 652 candidates examined, 383, or 58·7 per cent., were certified blind within the meaning of the Act. The work of the clinic since its inauguration in August, 1929, is summarised in the following statement:—

Year.	Number Examined.	Percentage Certified Blind.	Number Re-examined.
1929 (4 months), ...	339	50·0	—
1930, ...	1,166	62·4	75
1931, ...	910	61·9	147
1932, ...	711	56·3	145
1933, ...	652	58·7	176
	3,778	59·4	543

There has taken place a gradual reduction in the numbers examined and in the percentage certified blind, while there has been an increase in the numbers re-examined.

Source of Candidates.—The source of candidates is shown in the following statement:—

Applicants for Blind Pension, ...	251
Applicants for increased Public Assistance, ...	88
Applicants for Technical Training, ...	51
Applicants for Free Tramway Pass, ...	49
Applicants referred by Mission to Outdoor Blind, ...	169
Wireless Licence, ...	31
Unclassified, ...	13

It will be noted that the largest number of candidates was examined in connection with applications for blind pensions.

TABLE I.

SHOWING THE AGE AND SEX INCIDENCE OF APPLICANTS CLAIMING TO BE BLIND EXAMINED AT THE CERTIFYING CLINIC DURING THE YEAR 1933.

Age.	Certified.			Rejected.		
	Males.	Females.	Total.	Males.	Females.	Total.
-1, ...	—	—	—	—	—	—
1-4, ...	1	—	1	1	—	1
5-15, ...	4	3	7	7	5	12
16-29, ...	15	12	27	16	13	29
30-39, ...	24	9	33	10	7	17
40-49, ...	33	18	51	12	12	24
50-59, ...	43	31	74	37	35	72
60-69, ...	51	52	103	53	29	82
70+, ...	38	49	87	22	10	32
	209	174	383	158	111	269

From the above table it may be seen that 450 of the candidates, that is 69 per cent., were over 50 years of age, as com-

pared with 71 per cent. in 1930, 67·8 per cent. in 1931, and 63 per cent. in 1932. As in the four previous years also, male applicants outnumbered female. It may be observed also that of the 383 persons certified blind 0·3 per cent. were below school age (1·5 years), 1·8 per cent. were of school age (5-15 years), 29 per cent. were between 16 and 49 years, and 68·9 per cent. were over 50 years of age.

TABLE II.

SHOWING THE ALLOCATION OF THE APPLICANTS EXAMINED DURING 1933 AT THE CERTIFYING CLINIC AMONG THE LOCAL AUTHORITIES COMPOSING THE JOINT-COMMITTEE FOR THE BLIND FOR GLASGOW AND THE SOUTH-WEST OF SCOTLAND.

	Certified.			Rejected.		
	Males.	Females.	Total.	Males.	Females.	Total.
Glasgow,	111	69	180	66	51	117
Airdrie,	1	2	3	3	1	4
Coatbridge,	2	3	5	10	7	17
Hamilton,	2	1	3	3	2	5
Motherwell and Wishaw,	5	6	11	6	7	13
Rutherglen,	5	1	6	2	6	8
Other Lanarkshire, ...	14	29	43	24	13	37
Greenock,	13	11	24	1	6	7
Paisley,	9	5	14	7	1	8
Port-Glasgow,	1	2	3	2	—	2
Other Renfrewshire, ...	7	4	11	5	1	6
Dumbarton,	1	3	4	—	1	1
Clydebank,	1	2	3	3	1	4
Other Dunbartonshire, ...	6	7	13	5	2	7
Falkirk,	—	1	1	1	1	2
Stirling,	1	1	2	—	2	2
Other Stirlingshire, ...	6	4	10	2	2	4
Ayr,	1	2	3	3	1	4
Kilmarnock,	4	4	8	1	1	2
Other Ayrshire,	10	9	19	7	4	11
Argyll County,	3	5	8	1	—	1
Bute County,	2	1	3	1	—	1
Dumfries Burgh,	4	2	6	5	1	6
Not stated,	—	—	—	—	—	—
Total,	209	174	383	158	111	269

Of all applicants examined, 297, or 44 per cent., resided in Glasgow, the corresponding percentages for 1929, 1930, 1931, and 1932 being 48, 65, 51, and 48 respectively.

Causes of Blindness.—The causes of blindness of the 383 accepted cases during the year are shown below. The largest number is included in the category “Congenital” and “Undetermined.” As in previous years, the most important individual causes of blindness are myopia, cataract, glaucoma, venereal diseases, and chronic septicaemia.

CAUSES OF BLINDNESS.

Congenital and Undetermined—

Congenital anomalies (17) and developmental defects (14),	...	31
Tumour of globe and orbit,	... ..	—
Myopia,	... ..	58
Other errors of refraction,	... ..	—
Glaucoma, primary,	... ..	38
Cataract, primary,	... ..	65
Other primary ocular defects (primary detachment),	... ..	3

*Infectious and Toxic—**(a) Exogenous :*

Ophthalmia neonatorum,	... ..	8
Trachoma,	... ..	6
Local septic infection of coats of eye,	... ..	11
Other local specific infections (gonorrhœa) (mycosis),	... ..	—

(b) Endogenous :

Gonorrhœa,	... ..	—
Syphilis, congenital,	... ..	17
Syphilis, acquired, including not definitely congenital,	... ..	31
Specific fevers (smallpox) (measles) (scarlet) (diphtheria),	... ..	—
Meningitis (non-tuberculous), including cerebro-spinal fever,	... ..	2
Tuberculosis,	... ..	2
Phlyctenular, strumous and similar, not definitely tuberculous,	... ..	7
Septicæmia, acute,	... ..	—
Septicæmia, chronic ; autotoxic, focal sepsis,	... ..	28
Other general infections and organismal diseases,	... ..	3

Traumatic and Chemical—

Birth trauma,	... ..	—
Non-industrial trauma,	... ..	4
Industrial trauma,	... ..	7
War trauma,	... ..	4
Trauma, category not ascertainable,	... ..	1
Chemico-toxic, non-industrial (tobacco) (alcohol) (lead),	... ..	1
Scheduled industrial diseases (lead) (pyroxylin) (carbon bi-sulphide) (aniline) (phosphorus) (glass-blowers' cataract) (metal workers' cataract) (miners' nystagmus),	... ..	1
Sympathetic ophthalmia,	... ..	7

Systemic Diseases—

Anæmia and blood diseases,	... ..	1
Diabetes,	... ..	8
Nephritis,	... ..	1
Pregnancy,	... ..	—
Vascular diseases, including cerebral vascular lesions,	... ..	17
Intracranial neoplasm,	... ..	6
Other diseases of central nervous system,	... ..	8
Functional disturbances (hysteria) (malinger),	... ..	—
Other general diseases,	... ..	2

Not Ascertainable Definitely, 5

Total, 383

In 1933, 176 cases were re-examined, compared with 145 in 1932 and 147 in 1931. The alteration in the decision of the clinic as the result of re-examination was as follows:—

(a) Certified blind on first examination and decision unaltered on re-examination,	21
(b) Certified blind on first examination and decision reversed on re-examination,	8
(c) Certified not blind on first examination and decision unaltered on re-examination,	69
(d) Certified not blind on first examination and decision reversed on re-examination,	30
(e) Certified blind on second examination and decision unaltered on re-examination,	6
(f) Certified blind on second examination and decision reversed on re-examination,	4
(g) Certified not blind on second examination and decision unaltered on re-examination,	17
(h) Certified not blind on second examination and decision reversed on re-examination,	12
(i) Others,	9
Total,	<u>176</u>

During the year 12 cases previously certified blind were decertified.

Serological Tests for Syphilis.—Of the cases examined at the clinic specimens of blood were submitted to the Kahn test in 541 instances, and of these, 64, or 11·8 per cent., were reported positive. In 1929 the percentage of specimens giving positive results was 12·5; in 1930, 11·5; in 1931, 9·1; and in 1932, 9·2. It should be mentioned that all specimens of serum showing a positive Kahn test are also submitted to the Wassermann reaction for confirmation.

SECTION II.

VITAL STATISTICS.

The vital statistics are given in detail in respect of municipal wards, causes, sex, age, &c., in the Appendix Tables on pages 269 to 302, but a summary is here introduced of the principal numbers and rates for convenient comparison with those of the preceding years.

SUMMARY.

	1931.	1932.	1933.
Population,	1,088,461	1,095,263	1,103,357
Acreage,	29,511	30,046	30,046
Persons per acre,	37	36	37
Number of Inhabited Houses,	261,179	263,321	265,146
Deaths—Number registered,	16,647	17,269	16,033
„ After correction for Transfers,	15,505	16,071	14,747
Births—Number registered,	23,575	23,943	22,039
„ After correction,	22,926	22,732	21,361
Death-rate per 1,000 living—			
All causes,	14.24	14.67	13.37
Birth-rate per 1,000 living,	21.06	20.76	19.36
Deaths under One Year—After correction,	2,397	2,542	2,061
„ „ „ Per 1,000 births,	105	112	96

BIRTHS.

The number of births registered, corrected for outward transfers and including those transferred inward, was 21,361 in 1933, compared with 22,732 and 22,926 in 1932 and 1931 respectively. The birth-rate is, therefore, 19.36, which is again the lowest recorded for the City. This rate had remained steady around 21 for the previous six years. It is now only one-half of the rate prevailing fifty years ago.

The highest ward birth-rate was again recorded in Mile-end with 30.1 per thousand of the population, followed by Cowcaddens with 27.8, Dalmarnock with 26.6, and Hutchesontown, Gorbals, and Calton with over 25. Except in the case of Mile-end, these rates are all lower than those of the previous year. The lowest rate, 6.0, was recorded in Kelvinside, which compares with 7.0 for the preceding year. The corresponding figures for Langside were 8.6 against 8.5, for Pollokshields 9.1 against 8.7, and for Camphill 9.7 against 10.5. These and other municipal ward rates are given in the Appendix, Table V, which also contains rates for the preceding year.

Wards which show an excess of deaths over births are as follows :—

WARD.					Death Rate per Million.	Birth Rate per Million.	Excess of Death-rate over Birth-rate.
Park, ... ..	...	...	...	...	15,423	10,077	5,346
Kelvinside, ... ..	...	...	...	...	11,368	5,981	5,387
Camphill, ... ..	...	...	...	...	13,336	9,727	3,609
Langside, ... ..	...	...	...	...	11,954	8,555	3,399
Pollokshields, ... ..	...	...	...	...	11,402	9,082	2,320

The number of births in Mile-end and Yoker were more than double, and in Maryhill, Kingston, and Govan almost double the deaths.

The following information from the Registrar-General's returns shows the birth-rates for Glasgow and Scotland since 1871 :—

Glasgow. Scotland.			Glasgow. Scotland.		
1871-1880, ...	36·6	34·9	1925, ...	24·6	21·3
1881-1890, ...	36·5	32·4	1926, ...	23·5	20·9
1891-1900, ...	33·7	30·3	1927, ...	22·4	19·8
1901-1910, ...	31·2	28·4	1928, ...	22·3	19·8
1911-1920, ...	25·7	24·2	1929, ...	21·2	19·0
1921, ...	28·7	25·2	1930, ...	21·6	19·3
1922, ...	27·3	23·5	1931, ...	20·9	19·0
1923, ...	25·6	22·8	1932, ...	20·6	18·6
1924, ...	24·1	21·9	1933, ...	19·2	17·6

On the basis of local returns, the following comparison is made of the rates for several years in Glasgow and other towns :—

				1931.	1932.	1933.
Glasgow, ... ..	...	...	...	21·1	20·8	19·4
Edinburgh, ... ..	...	...	...	16·2	15·5	15·1
Dundee, ... ..	...	...	...	19·5	18·5	17·5
Aberdeen, ... ..	...	...	...	19·2	18·7	17·6
London, ... ..	...	...	...	15·0	14·3	13·2
Liverpool, ... ..	...	...	...	21·7	21·0	19·6
Manchester, ... ..	...	...	...	16·0	15·4	14·4
Birmingham, ... ..	...	...	...	16·9	16·3	14·7

ILLEGITIMATE BIRTHS.

Fewer illegitimate births were recorded—1,292 during 1933, compared with 1,330 for the preceding year. Owing, however, to the reduced birth-rate the percentage of the total is slightly higher, 6·0 against 5·9. The highest ward rates, as shown in Table V in the Appendix, are 12·2 in Park, 12·1 in Blythswood, and 11·8 in Exchange, all wards in the centre of the City with institutions which are likely to increase the numbers. Langside had the lowest percentage, 0·7, followed by Cathcart with 1·8.

A more accurate comparison of the legitimate and illegitimate birth-rates is obtained when the calculation is based on the number of females of child-bearing ages; the former on married women of 15 to 44 years of age, and the latter on the unmarried

women and widows of the same ages. This is given in the following table:—

GLASGOW.—BIRTH-RATES, DISTINGUISHING LEGITIMATE AND ILLEGITIMATE IN CERTAIN YEARS FROM 1871.

(Based on figures of Registrar-General).

Year.	Number of Legitimate Births.	Rate per 1,000 Married Women 15-44 years.	Number of Illegitimate Births.	Rate per 1,000 Unmarried Women and Widows 15-44 years.
1871, ...	17,118	298	1,749	27
1881, ...	17,605	293	1,501	22
1891, ...	18,304	283	1,553	21
1901, ...	22,676	260	1,530	14
1911, ...	19,966	229	1,603	14
1921, ...	27,790	238	1,922	13
1931, ...	21,504	176	1,427	10
1932, ...	21,401	175	1,331	9
1933, ...	20,073	164	1,294	9

MARRIAGES.

There were 9,272 marriages in 1933, compared with 9,203 in 1932. These numbers represent rates of 8·4 and 8·3 per thousand of the population respectively. This small increase is probably associated with the slight improvement in industry and the continued reduction in the number of unemployed. The marriage-rate for last year is only between 4 and 5 per cent. less than the average of the ten years, 1901-1910. The difference is relatively small when the difficult economic circumstances of recent years are taken into account. The following table shows marriages per thousand of the population since 1871:—

GLASGOW.—MARRIAGES PER 1,000 PERSONS LIVING.

1871-1880, ...	9·1	1921-1925, ...	9·3
1881-1890, ...	9·3	1926-1930, ...	8·5
1891-1900, ...	9·4	1931, ...	8·4
1901-1910, ...	8·8	1932, ...	8·3
1911-1920, ...	9·7	1933, ...	8·3

DEATHS.

The total number of deaths registered during the year was 16,033, which becomes 14,747 after adjustment for outward and inward transfers. This latter figure is lower by 1,324 than the corresponding number for the preceding year. The death-rate per thousand of the population is, therefore, 13·4, against 14·7 for 1932, and is the lowest on record. The previous low record was 13·8 which occurred in 1923, ten years ago. This low record death-rate may be attributed to the favourable weather conditions prevailing during the greater part of the year, which influenced favourably the mortality from many causes, especially that due to respiratory disease.

Quarterly Death-rates.—The following table of quarterly death-rates shows the variation in the seasonal rates during the past three years:—

	1931.	1932.	1933.
1st Quarter, 194	{ Pneumonia and Whooping Cough prevalent. 17·3	{ Scarlet Fever and Pneumonia and Measles prevalent. 16·5	{ Scarlet Fever and Pneumonia and Whooping- cough prevalent.
2nd „ 15·0	13·9	{ Scarlet Fever prevalent. 12·5	{ Scarlet Fever prevalent.
3rd „ 11·8	11·0	10·7	
4th „ 14·7	{ Scarlet Fever and Measles prevalent. 16·5	{ Scarlet Fever Influenzal Pneumonia and Whooping- cough prevalent.	{ Scarlet Fever prevalent

Ward Death-rates.—There is considerable disparity in the municipal ward death-rates as will be found on reference to Table VI in the Appendix. The highest rate, 18·0, was recorded in Exchange, which is followed by 17·9 in Blythswood, 16·9 in Calton, and 16·3 in Cowcaddens. The lowest rates were 7·7 in Yoker and Knightswood, 10·3 in Ruchill, and 10·7 in Pollokshaws, followed by 10·8 in Cathcart.

According to the Registrar-General's returns, the rates for Glasgow since 1881 have been as follows:—

GLASGOW.—ALL CAUSES.—DEATH-RATE PER 1,000 LIVING.

1881-1890,	24·22	1925,	14·83
1891-1900,	21·53	1926,	15·09
1901-1910,	19·56	1927,	14·63
1911-1920,	16·36	1928,	14·80
1921,	15·10	1929,	16·53
1922,	17·20	1930,	14·31
1923,	14·28	1931,	14·13
1924,	16·10	1932,	14·55
		1933,	13·3

The following is a comparison of death-rates based on local returns of several large towns in Scotland and England:—

GLASGOW AND SEVERAL TOWNS.—DEATH-RATE PER 1,000 LIVING.

	1930.	1931.	1932.	1933.
Glasgow,	14·2	14·2	14·7	13·4
Edinburgh,	13·8	12·9	13·5	13·2
Dundee,	16·0	13·9	13·8	14·5
Aberdeen,	12·4	13·9	13·4	13·0
London,	11·6	12·4	12·3	12·4
Liverpool,	13·2	14·3	13·2	14·4
Manchester,	12·7	13·9	13·0	13·4
Birmingham,	10·8	11·7	11·3	11·0

Transfer Deaths.—The deaths on which the above rates for Glasgow are calculated include those of persons formerly resident in Glasgow, but dying in institutions or elsewhere outwith the City. On the other hand, those dying within, but with home addresses outside, are excluded. The “inward transfers” numbered 539 during 1933, compared with 573 and 574 for the two preceding years, while the “outward transfers” numbered 1,825, compared with 1,771 and 1,716. The causes of deaths in both these groups are given in Appendix Table No. VII.

CAUSES OF DEATH.

The principal causes of death are summarised in the following table :—

SUMMARY OF DEATH-RATES PER MILLION FROM PRINCIPAL CAUSES.

	1931.	1932.	1933.
General Diseases—			
(a) Infectious,	1,412	977	781
(b) Tuberculous—			
(1) Phthisis,	865	889	824
(2) Others,	318	269	246
(c) Malignant (cancer, &c.),	1,393	1,366	1,394
Diseases of the nervous system,	1,390	1,328	1,289
Diseases of the circulatory system,	2,517	2,680	2,907
Diseases of respiration,	2,025	2,494	1,852
Congenital defects and malformations			
(including premature birth),	840	761	729
Violence,	600	554	573
All other causes,	2,885	3,356	2,770
	<hr/>		
All causes,	14,245	14,674	13,365
	<hr/>		

The mortality from infectious diseases again showed a definite reduction, the death-rate per million of the population, 781, being little more than half the rate of two years ago. This further reduction is largely caused by the lower mortality from measles and influenza, the former of which was almost entirely absent with a record low mortality-rate of 4 per million, compared with 171 for the preceding year and 382 in 1931; while the death-rate from influenza, 221, was only about half the rate of 1932. Cerebro-spinal fever and diphtheria were both slightly less fatal. Despite the continued heavy prevalence of scarlet fever, there were fewer deaths, the mortality rate for 1933 being 75 against 93 for the preceding year.

The death-rate from pulmonary tuberculosis was 824, compared with 889 in 1932. On one occasion only has the mortality been less, i.e., in 1930, when the rate was 805. The mortality from non-pulmonary forms of the disease was the lowest yet recorded, the rate being 246 per million of the population, compared with 269 for the preceding year. Since 1930 there has been a reduction of almost 30 per cent. in the number of deaths from these non-pulmonary forms of the disease. There was a marked reduction in the death-rate from tuberculous meningitis, 96, compared with 134 for 1932 and 153 for 1931. The rate for the quinquennium 1906-10 was 416. A further reduction has taken place in the abdominal forms of the disease, i.e., 44, compared with 46. The rate for other unspecified forms of non-pulmonary tuberculosis, 106, is a little higher than the figure for the preceding year, 89, which, however, was the lowest rate hitherto reached.

Nervous diseases again showed a lower mortality for the fifth consecutive year. The greatest relative reduction took place in meningitis, 46 against 56. The heaviest mortality, however, in this group was caused by cerebral hæmorrhage, the death-rate per million being 930, compared with 937 in 1932.

The death-rate from diseases of the circulatory system still continues to increase, all the rates for the various causes in this group being higher than the respective rates for the preceding year. Deaths from heart disease numbered 2,558, representing a rate of 2,319, which compares with 2,153 in 1932; heart disease is the most prominent individual cause of death.

Diseases of the respiratory system were considerably less prevalent. The mortality from bronchitis was less, 460 against 547; that from pneumonia exhibited the greatest reduction, i.e., 1,220 per million of the population, compared with 1,750 for the preceding year. It is probable the lower mortality from certain infectious and other diseases was due to a relative absence of pneumonia as a complication.

The mortality from peptic ulcers, appendicitis, cirrhosis of the liver, and other digestive diseases was also lower in each case than in 1932; while diarrhoea under two years of age was responsible for a death-rate of 313, compared with 384. Deaths from congenital debility, premature birth, and malformations were again fewer, probably because of the further reduction in the birth-rate. The good weather conditions, especially towards the close of the year, were apparently favourable to the aged for the death-rate from senility was only 294 as against 401 in

1932. Particulars of the causes of death with a comparison of the rates for the preceding year are given in Appendix Table VIII.

Age and Sex Distribution of Deaths.—The age and sex distribution of each cause of death is given in Appendix Table IX. Of the 83 deaths from scarlet fever, 40 were males and 43 females; 4 of the former and 6 of the latter occurring at ages over 15 years. There were 104 deaths from whooping-cough among males and 123 among females, all of which occurred under five years of age, with the exception of one male under ten and one between the ages of 65 and 75. Of the 40 male deaths from diphtheria, 20 were under five and 19 of school age; while of the 49 females who died from the disease, 25 were under five and 21 of school age.

Of the total deaths from pulmonary tuberculosis, 909, there were 539 males and 370 females. Deaths among females at the various age-groups under 25 years of age were mostly in excess of the males, but above that age deaths among males were more numerous.

There were only 11 male deaths from syphilis in 1933, compared with 33 during the preceding year; the respective numbers for females were 13 and 11. General paralysis of the insane was responsible for 49 male and 12 female deaths, against 44 and 15 respectively for 1932, numbers which would seem to indicate that the reduction in mortality from these causes has been arrested during the past five or six years.

Male deaths from diabetes numbered 40 and female deaths 89, both considerably lower than the respective numbers of 55 and 100 in 1932; the excess among females is probably largely due to the considerably greater proportion of females surviving to older ages. The same observation applies to cerebral hæmorrhage, from which there were 464 male deaths against 562 female, 300 of the former and 393 of the latter occurring at ages over 65. Deaths from meningitis and other nervous diseases were more numerous among males; while heart disease, the heaviest individual cause of mortality, was about equally fatal in both sexes.

Pneumonia as a cause of death was almost twice as fatal to males last year, there being 851 deaths, compared with 495 females, the excess being evident at almost every age-group, and especially so in the first year of life when there were 264 male deaths against 157 female deaths. Male deaths from diarrhoeal diseases, &c., under two years of age were also in excess of the females, 200 compared with 146.

GLASGOW, 1933.—DEATHS FROM CANCER IN THE DIFFERENT SITES AS GIVEN IN THE INTERNATIONAL LIST OF CAUSES OF DEATH, 1931.

SITE OF LESION.	Year 1932.																					
	MALES.										FEMALES.										BOTH SEXES.	
	-15	-25	-35	-45	-55	-65	-75	75+	Total.	-15	-25	-35	-45	-55	-65	-75	75+	Total.	Males.	Females.		
Buccal Cavity and Pharynx, ...	1	—	—	—	14	25	36	9	85	—	—	1	—	1	3	3	1	9	94	72	7	
Digestive Organs and Peritoneum—																						
(a) Oesophagus, ...	—	1	1	4	4	16	9	3	38	—	—	—	—	4	5	9	—	18	56	44	25	
(b) Stomach and Duodenum, ...	—	—	3	11	29	54	63	15	175	—	—	2	6	18	35	44	29	134	309	174	160	
(c) Rectum, ...	—	—	1	4	9	22	20	9	65	—	—	1	3	4	7	17	4	36	101	62	32	
(d) Liver and Biliary Passages, ...	—	—	1	3	4	16	14	5	43	—	—	—	1	1	12	23	11	48	91	50	61	
(e) Pancreas, ...	—	1	—	2	4	13	10	4	34	—	—	—	1	2	3	4	1	11	45	20	16	
(f) Peritoneum, ...	—	—	—	—	—	—	1	—	1	—	—	—	1	—	—	—	—	1	2	1	4	
(g) Other Digestive Organs, ...	—	3	1	3	17	36	50	19	129	—	—	3	7	15	22	37	22	106	235	108	137	
Respiratory Organs, ...	—	—	1	3	22	20	17	2	65	—	1	—	9	13	14	8	1	46	111	69	25	
Uterus, ...	—	—	—	—	—	—	—	—	—	—	1	5	15	28	30	28	4	111	111	—	95	
Other Female Genital Organs, ...	—	—	—	—	—	—	—	—	—	—	—	1	4	10	15	8	—	38	38	—	27	
Breast, ...	—	—	—	1	—	—	—	—	1	—	—	—	16	29	33	29	15	122	123	—	123	
Male Genito-Urinary Organs, ...	1	—	1	2	7	22	21	14	68	—	—	—	—	—	—	—	—	—	68	57	—	
Skin, ...	—	—	—	—	1	1	5	3	10	—	—	—	—	—	1	3	4	8	18	6	9	
Other or Unspecified Organs, ...	4	4	1	4	9	20	13	6	61	1	2	1	5	9	21	29	6	74	135	47	65	
Totals, ...	6	9	10	37	120	245	259	89	775	1	4	14	68	134	201	242	98	762	1,537	710	786	

The total deaths from cancer numbered 1,537 in 1933, compared with 1,496 during the preceding year. The rate per million of the population, 1,394, compares with 1,366 for 1932 and 1,393 in 1931. Although there is still no sign of reduction, it would appear that for the time being the annual increase in the number of deaths from cancer, which has been in evidence over a considerable period, is now reduced to small dimensions. A supplementary table is again included, giving the age and sex distribution of the deaths according to the site of the disease.

The comparative freedom of females from cancer of the buccal cavity and pharynx is again illustrated in 1933, when there were only 9 deaths among females against 85 among males. The corresponding figures for the previous year were 7 and 72. The incidence among males begins at 45 years and increases with advancing age. Males are also more subject to cancer of the œsophagus, 38 deaths to 18 females; the stomach and duodenum, 175 against 134; and the rectum, 65 compared with 36—all parts associated with digestion. Females are in excess for affections of the liver, &c., 48 against 43 males, but as the excess occurs at ages over 65 years, this is probably due to the larger number of females surviving to old age. Males, however, predominate for cancer of the pancreas, with 34 against 11 females, and other digestive organs, 129, compared with 106. These comparisons may be taken as reflecting the earlier ageing of the male sex. As regards cancer in the female sex, disease of the uterus caused 111 deaths, and of the breast 122 deaths. The corresponding figures for the previous year were 95 and 123. •

There were considerably fewer deaths from puerperal diseases, those from puerperal fever in 1933 numbering 68, compared with 83 for the preceding year, while the corresponding figures for other puerperal causes were 56 and 96. These diseases, however, will be dealt with in the next section in relation to births, which is a more accurate method of comparison.

Deaths from senility were considerably fewer, 324 against 439 in 1932, probably because of the favourable weather conditions. Deaths from suicide and other violence, however, were more numerous, and as most of these are due to motor accidents the following table is again inserted showing the sex and age distribution during the past five years. Deaths of males under five years are considerably greater than those of the past few years.

GLASGOW.—DEATHS FROM "SUICIDE AND OTHER VIOLENCE."

Year.	MALES.					FEMALES.					Both Sexes.
	- 5 years.	- 15 years.	- 45 years.	+ 45 years.	Total.	- 5 years.	- 15 years.	- 45 years.	+ 45 years.	Total.	
1929,	48	55	153	210	466	38	22	38	109	207	673
1930,	45	66	165	237	513	33	22	49	105	209	722
1931,	37	59	133	205	434	28	24	47	120	219	653
1932,	41	63	109	181	394	41	20	43	109	213	607
1933,	62	46	149	174	431	34	21	52	94	201	632

Deaths in Hospitals, Nursing Homes, and other Institutions.
—Details of the deaths in Glasgow institutions are given in Appendix Table X, which shows that half (50·9 per cent.) of the total deaths registered occurred in such institutions. The proportion for the previous year was 49·7 per cent. Of the total 7,501 deaths, 3,250 occurred in local authority general hospitals and poorhouses, 1,538 in fever hospitals and sanatoria, and 227 in mental hospitals; altogether more than two-thirds of the total deaths in institutions. In voluntary hospitals and infirmaries 2,271 deaths occurred, and 215 in nursing homes. The largest number of deaths occurred from heart disease, 1,077; followed by pneumonia, 926; cancer, 700; and 538 from pulmonary tuberculosis.

SECTION III.

MATERNITY AND CHILD WELFARE.

INFANT MORTALITY.

The favourable weather of 1933 coincided with an almost complete absence of measles and a comparatively low incidence of whooping-cough, while pneumonia, the most fatal of all diseases to child life apart from diseases of immaturity, was only prevalent for a brief period at the beginning of the year. Pneumonia was almost entirely absent towards the end of the year, the period during which it usually causes a heavy mortality, especially when cold weather is accompanied by fog.

These are probably the main causes of the reduction in the infant mortality in Glasgow during 1933 when the rate was 96, compared with 112 for the preceding year and 105 in 1931. This is the second lowest infant mortality rate for the City, the previous record being 89, which occurred in 1923—ten years previously. That year, also, was marked by a relatively low incidence of measles and whooping-cough and a very low mortality from pneumonia. One or other of these diseases, however, was exceptionally prevalent either in the year preceding 1922 or in the year which followed, so that the record low mortality then was interposed between high rates of 120 and 119. During the past few years the mortality in the first year of life has been more uniform at the reduced level of about 105 per thousand births.

The following tables show (1) the infant death-rates in Glasgow since 1891; (2) the rates in other large towns; and (3) the death-rates among legitimate and illegitimate children per 1,000 births in each group:—

GLASGOW.—INFANT DEATH-RATE DURING SEVERAL PERIODS.

			Per 1,000.				Per 1,000.
Average of 10 years, 1891-1900, ...	10	1901-1910, ...	149	1926, ...	...	...	104
" 10 " 1901-1910, ...	5	1911-1915, ...	135	1927, ...	...	...	107
" 5 " 1911-1915, ...	5	1916-1920, ...	134	1928, ...	...	...	107
" 5 " 1916-1920, ...	5	1921-1925, ...	115	1929, ...	...	...	107
" 5 " 1921-1925, ...	5		107	1930, ...	...	...	101
				1931, ...	...	...	105
				1932, ...	...	...	112
				1933, ...	...	...	96

COMPARISON WITH SEVERAL LARGE TOWNS.

				1931.	1932.	1933.
GLASGOW,	...	...	...	105	112	96
Edinburgh,	...	...	...	69	73	66
Dundee,...	...	...	...	92	72	98
Aberdeen,	...	...	...	90	93	79
London,...	...	...	...	65	67	60
Liverpool,	...	...	...	93	91	98
Manchester,	...	...	...	84	85	75
Birmingham,	...	...	...	71	67	66

Illegitimate Mortality. — The mortality of illegitimate children compared with others is shown in the following table, since the beginning of the present century. It will be observed that the marked fall in the rate, 127, compared with 169 in 1932 and 173 in the year preceding.

GLASGOW.—DEATH-RATE PER 1,000 LEGITIMATE AND ILLEGITIMATE BIRTHS.

	Legitimate.	Illegitimate.			Legitimate.	Illegitimate.
1899-1900, ...	144	286	1926,	...	101	157
1901-1910, ...	126	257	1927,	...	105	147
1911-1915, ...	127	217	1928,	...	102	176
1916-1920, ...	110	175	1929,	...	103	165
1921-1925, ...	103	169	1930,	...	91	146
			1931,	...	99	173
			1932,	...	101	169
			1933,	...	95	127

Causes of Infant Mortality.—The causes of infant mortality according to sex and for each month during the first year of life are given in the Appendix Tables XIII and XIV. The proportion of deaths occurring in the first month among males was 38 per cent. and for females 39, compared with the respective percentages of 33 and 29 for the preceding year. These increases, compared with last year, were due to the considerable reduction in the mortality from respiratory disease at later months during 1933, especially among females.

This mortality in the early weeks of life is demonstrated in the following summary of the totals of the principal groups of causes of infant mortality given in the Appendix Tables XIII and XIV, with a comparison for the previous years since 1921.

The male mortality, as is usual, is about 30 per cent. in excess of the rate for females:—

				Rate per 1,000 Births.								
CAUSES OF DEATH.				1921-25	1926	1927	1928	1929	1930	1931	1932	1933.
MALES—												
I. Immaturity,	...	...	...	40	44	39	45	45	40	42	41	42
II. Diseases of Respiratory System,				30	29	36	28	35	33	26	38	27
III. Diseases of Digestive System,...				15	15	17	17	14	14	17	21	18
IV. Diseases of Nervous System, ...				7	8	6	7	6	5	5	4	5
V. Tuberculous Diseases, ...				3	2	1	2	1	2	2	1	1
VI. Infectious Diseases, ...				15	11	14	15	9	12	21	9	8
VII. Suffocation, ...				—	—	1	—	—	—	—	—	1
VIII. All other causes, ...				9	9	5	7	8	6	7	8	8
All causes, ...				119	118	119	121	118	112	120	122	110
FEMALES—												
I. Immaturity,	...	...	...	32	29	37	33	34	33	36	30	32
II. Diseases of Respiratory System,				22	23	24	23	27	25	15	34	18
III. Diseases of Digestive System,...				10	13	10	11	10	10	11	16	14
IV. Diseases of Nervous System, ...				5	4	4	4	5	3	3	4	3
V. Tuberculous Diseases, ...				2	1	1	2	2	2	1	1	1
VI. Infectious Diseases, ...				14	10	14	14	10	11	17	8	8
VII. Suffocation, ...				1	1	—	1	—	—	—	—	1
VIII. All other causes, ...				7	7	5	5	7	5	5	7	5
All causes, ...				93	88	95	93	95	89	88	100	82
Ratio—Males to 100 Females, ...				128	134	125	130	124	126	136	122	134

Compared with the previous year, the mortality per thousand births from diseases of the respiratory system is less, the rate for males being 27, as compared with 38, while the reduction for females is even more marked, 18 compared with 34. Diseases of the digestive system were also less fatal, the male mortality being 18 and the female 14, compared with the corresponding rates of 21 and 16 respectively in the previous year. An increase in the male deaths from diseases of the nervous system is counterbalanced by a reduction among females. The infant mortality from tuberculous diseases has now become so small that the rate per thousand births does not indicate the slight variations, usually in a downward direction, in the several causes which compose this group. The mortality from infectious diseases for both sexes was 8 per thousand, which is lower than any previous rate for this group. Measles was almost entirely absent during 1933, and only 2 female deaths were recorded. Scarlet fever caused only 3 deaths despite its continued high prevalence. Whooping-cough, on the other hand, has maintained a steady incidence during the past four or five years, and it is to this cause that most of the mortality in the infectious group of diseases may

be ascribed. It was the cause of 55 male and 62 female deaths out of totals of 89 and 84 respectively for all infections. Cerebro-spinal fever was the next most fatal disease, and caused the death of 19 males and 9 females.

There were 1,216 deaths of male and 845 of female infants during the year, compared with 1,427 and 1,115 respectively for the previous year. The infant mortality rate was 110 for males and 82 for females, while the ratio of male deaths to 100 female deaths was 134.

Infant Mortality in Wards.—The infant mortality rates in the municipal wards do not now show the extreme differences which formerly occurred, as shown in Table XII in the Appendix, which compares 1933 with the two preceding years. The highest ward mortality was 131 in Calton, which compares with the highest ward mortality of 167 in Whitevale in 1932 and 150 in Exchange in 1931. Other high rates in 1933 were 125 in Exchange, 121 in Townhead, and 119 in Anderston. The lowest ward rate was 26 in Langside, followed by 36 in Pollokshields and 49 in Cathcart.

CHILD WELFARE SCHEME.

No alteration has taken place in the Child Welfare Scheme other than certain modifications in the arrangement of clinics. The erection of the combined Child Welfare and School Health Service Clinic in Garngad was begun during the year and is still in course of construction. The booklet, entitled "Health of Mother and Child," which was published towards the end of 1932 continues to be distributed through Child Welfare Centres, and during 1933 1,787 copies were sold.

NOTIFICATION OF BIRTHS.

The number of notifications of births received during 1933 is shown in Appendix Table XV, compared with the corresponding figures for the two preceding years. As notifications include still-births, the notifications are always in excess of the number of births registered. Omissions to notify births in terms of the Act average around $2\frac{1}{2}$ per cent., but most of these are formally intimated after attention has been directed to the omission.

Nature of Attendance at Births.—The proportion of births medically attended fell from 48·6 per cent. in 1914 to 40·1 in 1925. In 1933 the proportion was 49·2.

Still-Births.—The number of still-births known to occur in Glasgow usually averages about 4 per cent. of the total births. During 1933 there were 897 still-births, equal to a rate of 4.0. Of the medically-attended births there were 192 still-births among home cases, representing a rate of 3.7, and 451 in institutions, equal to a rate of 8.8. Together the rate indicated is 5.8. Among non-medically attended births there were 254, which is equivalent to a rate of 2.2.

WORK OF THE MATERNITY AND CHILD WELFARE CENTRES.

In order to adjust the consultations as far as possible to the numbers attending considerable alteration has been made in the time-table. Nine clinics formerly reserved for children under one year have been made available for the age-group up to five years, and three which were formerly for children between one and five years now cater also for infants. An infant consultation at Shettleston was discontinued and an ante-natal consultation added. The revised list of clinics is as follows:—

LIST OF MATERNITY AND CHILD WELFARE CLINICS.

	9 a.m.	1.30 p.m.
MONDAY,	Church Hall, Garngad Hill. 106 Orr Street. 150 Wellshot Road, Shettleston. 130 Adelphi Street, S. (—1 year). 2 Summerton Road, Govan (Ante-natal). Elder Park Centre (Ante-natal). Richard Street (Ante-natal).	20 Cochrane Street (Ultra-Violet Ray). Richard Street. 1 Burgh Hall Street, Partick (Ante-natal). 60 Avenuepark Street. 106 Orr Street. 150 Wellshot Rd., Shettleston (Ante-natal). 130 Adelphi Street, S. (—1 year). 132 Weir Street. 2 Summerton Road, Govan (Ultra-Violet Ray). 614 Dobbie's Loan (Ante-natal). Richard Street (Ante-natal).
TUESDAY,	Richard Street (1-5 years). 194 Fernbank Street, Springburn. 60 Avenuepark Street. 150 Wellshot Road, Shettleston. 2 Summerton Road, Govan. 106 Orr Street. 130 Adelphi Street. 614 Dobbie's Loan.	1 Burgh Hall Street, Partick (—1 year). 614 Dobbie's Loan, (Ante-natal). 106 Orr Street. 150 Wellshot Road, Shettleston. 130 Adelphi Street (Ante-natal). Elder Park Centre (Ante-natal). 194 Fernbank Street, Springburn. Blawarthill (Ante-natal). 194 Fernbank St., Springburn (Ante-natal). 614 Dobbie's Loan.
WEDNESDAY,	20 Cochrane Street (Ultra-Violet Ray). Richard Street (—1 year). 60 Avenuepark Street. 106 Orr Street (Ante-natal). 130 Adelphi Street, S. (1-5 years). 132 Weir Street. 2 Summerton Road, Govan (Ultra-Violet Ray). 150 Wellshot Road, Shettleston. Church Hall, Garngad Hill.	194 Fernbank St., Springburn (Ante-natal). 614 Dobbie's Loan. 106 Orr Street. 130 Adelphi Street, S. (Ante-natal). 2 Summerton Road, Govan.
THURSDAY,	614 Dobbie's Loan. 106 Orr Street (1-5 years). 130 Adelphi Street, S. (1-5 years).	1 Burgh Hall Street, Partick (1-5 years). 60 Avenuepark Street (Ante-natal). 614 Dobbie's Loan.

9 a.m.

THURSDAY 132 Weir Street.
 Richard Street (—1 year).
 194 Fernbank Street, Springburn
 (Ante-natal).
 20 Cochrane Street.
 FRIDAY, Blawarthill (—1 year).
 194 Fernbank Street, Springburn,
 614 Dobbie's Loan, (Ante-natal).
 60 Avenue Park St. (Ante-natal).
 106 Orr Street.
 150 Wellshot Road, Shettleston.
 130 Adelphi Street, S. (1-5 years).
 2 Summerton Road, Govan.

1.30 p.m.

106 Orr Street (—1 year).
 150 Wellshot Rd., Shettleston (Ante-natal).
 130 Adelphi Street, S. (—1 year).
 132 Weir Street.
 2 Summerton Road, Govan (Ante-natal).
 20 Cochrane Street (Ultra-Violet Ray).
 Blawarthill (1-5 years).
 1 Burgh Hall Street, Partick (—1 year).
 614 Dobbie's Loan.
 106 Orr Street (Ante-natal).
 2 Summerton Road, Govan (Ultra-Violet
 Ray).
 Elder Park Centre.
 130 Adelphi Street (Ante-natal).

ternity Hospital Ante- and Post-Natal Clinics—Daily, Monday to Friday, at 1.30 p.m.
 Saturday, 9.30 a.m. Vaccination is also done at 20 Cochrane Street on Tuesdays at 12.30 p.m.

The total number of attendances at the infant consultations during 1933 was 154,716, compared with 172,937 for the preceding year. Primary attendances of infants were 9,455 in 1931, 9,249 in 1932, and 8,628 during last year. The falling birth-rate is in some measure responsible for this drop. A factor influencing the total figures of attendances is a reduction in the numbers applying for free milk, no doubt due to some extent to gradually diminishing unemployment. The number of consultations held in 1933 was 2,750, compared with 2,839 for the preceding year, the reduction being caused by the adjustment of the consultation time-table. The number of consultations was increased at Partick and Shettleston Centres and decreased at Weir Street and Blawarthill. For every primary attendance there were 14 subsequent attendances, a similar ratio to that of last year.

The following table gives the attendance at each consultation centre during the years 1932 and 1933:—

ATTENDANCES AT INFANT CONSULTATIONS, 1933.

	No. of Consultations held.	Children—1 year.		Children + 1 year.		Total No. of Attendances.		1932—Total No. of Attendances.	
		Prim.	Sub.	Prim.	Sub.	Prim.	Sub.	Prim.	Sub.
Adelphi Street, ...	351	1,355	11,042	173	10,232	1,528	21,274	1,449	20,967
Cecaddens, ...	258	893	6,724	198	7,516	1,091	14,240	1,199	14,327
Herpark, ...	200	592	5,723	155	5,419	747	11,142	761	11,288
Ingad Hill, ...	97	301	2,249	79	2,720	380	4,969	487	6,805
Govan, ...	155	496	4,254	82	3,260	578	7,514	604	8,272
Street, ...	403	1,452	16,191	135	8,859	1,587	25,050	1,930	29,704
ryhill, ...	149	574	3,965	93	3,939	667	7,904	692	8,557
Partick, ...	153	334	3,512	75	2,536	409	6,048	545	7,771
Hard Street, ...	201	471	4,649	83	4,678	554	9,327	738	10,801
Shettleston, ...	273	697	7,212	108	7,145	805	14,357	977	16,999
Weir Street, ...	202	448	3,776	78	3,873	526	7,649	592	9,435
Cochrane Street, ...	52	165	1,086	66	1,130	231	2,216	228	2,348
Springburn, ...	154	574	5,053	109	3,813	683	8,866	767	9,256
Dobkshaws, ...	—	—	—	—	—	—	—	131	1,547
Blawarthill, ...	102	276	2,188	57	1,853	333	4,041	294	3,476
	2,750	8,628	77,624	1,491	66,973	10,119	144,597	11,384	161,553
		86,252		68,464		154,716		172,937	

The illnesses, &c., recorded on first attendance at the consultations are here summarised:—

INFANT CONSULTATIONS.—ILLNESSES, &C., RECORDED.

	1933.		1932.	
	-1 Year.	+1 Year.	-1 Year.	+1 Year.
Debility and Malnutrition (including grossly Underweight), ...	362	78	429	140
Birth Debility, ...	147	3	164	—
Prematurity, ...	106	1	103	—
Marasmus, ...	9	1	2	—
Diseases of Digestive System, ...	6	—	—	3
Diseases of Respiratory System, ...	—	1	1	2
Whooping-cough, ...	—	1	—	—
Rickets, ...	4	23	6	55
Others, ...	2	—	—	—
Syphilis, ...	1	—	—	—
Total, ...	637	108	705	200

SUPPLY OF MILK AND MEALS TO NECESSITOUS MOTHERS AND CHILDREN.

During the year supplies of milk continued to be given to expectant and nursing mothers, and to children up to five years of age, under the following general conditions:—(1) Regular attendance at a Child Welfare Centre; (2) when the case was necessitous; and (3) when a supply of milk was certified by the Medical Officer of the Centre to be required on the grounds of health.

Except where conditions of health require a more frequent attendance, infants are not expected to attend more frequently than once a fortnight, and toddlers once in six weeks. While compliance with the above general conditions is usually required, exception is made where a mother or child, on first attendance at an infant consultation, presents conditions of health which suggest that an immediate grant of milk may be desirable or necessary. The following table summarises the applications and grants for the year 1933:—

Applications Granted.			
	Free.	At Reduced Price.	Applications Refused.
Fresh Milk, ...	35,210	1,159	785
Dried Milk, ...	313	—	—
	35,523	1,159	785
			37,467

These totals represent the number of individuals included in the applications. Grants are mainly for a period of six weeks at a time.

(a) *Fresh Milk*.—The following table further analyses the number of applications for fresh milk granted during the year:—

ORIGINAL APPLICATIONS.

Rate charged to Applicant.	Number of Families.	Number of Expectant and Nursing Mothers.	Number of Children under 5 years.
Half-Price,	107	43	66
Free,	2,736	1,331	1,424
	2,843	1,374	1,490

REPEAT APPLICATIONS.

Half-Price,	953	145	905
Free,	29,526	4,681	27,774
	30,479	4,826	28,679

TOTALS.

Half-Price,	1,060	188	971
Free,	32,262	6,012	29,198
	33,322	6,200	30,169

This table shows that 2,843 original applications were granted during the year for supplies of fresh milk, covering 1,374 expectant or nursing mothers, and 1,490 children under five years of age, or, together, 2,864 individuals. The repeat applications of these families and of those previously on the roll number 30,479, making a total of 33,322 applications granted. The total quantity of fresh milk ordered was 1,504,130 pints, and the cost £12,334.

Certificates for grants of fresh milk were given by the medical officers at the various Centres for the following reasons:—

SUMMARY OF MEDICAL CERTIFICATIONS ON APPLICATIONS
FOR FRESH MILK.

Diseases.	Mothers.		Children.		Total.
	Expectant.	Nursing.	—1 year.	—5 years.	
Debility,	118	6	72	109	305
Progressing,	—	—	229	356	585
Insufficiency of Breast Milk,	—	6,042	—	—	6,042
Child losing Weight, ...	—	—	37	210	247
Child under Weight, ...	—	—	8,773	17,356	26,129
Child's Weight stationary,	—	—	89	205	294
Malnutrition,	—	—	617	935	1,552
Marasmus,	—	—	4	3	7
<i>Debility after—</i>					
Infectious Diseases, ...	—	—	37	146	183
Other Diseases,	7	1	69	147	224
<i>Infectious Diseases—</i>					
Measles,	—	—	2	4	6
Whooping-cough,	—	—	42	105	147
Chickenpox,	—	—	—	10	10
<i>General Diseases—</i>					
Anaemia,	5	—	—	5	10
Rickets,	—	—	39	495	534
<i>Diseases of Respiratory System—</i>					
Bronchitis,	—	—	23	20	43
Pneumonia,	—	—	4	12	16
<i>Others—</i>					
Enteritis,	—	—	4	7	11
Albuminuria,	21	—	—	—	21
Influenza,	—	—	—	3	3
Totals,	151	6,049	10,041	20,128	36,369

(b) *Dried Milk*.—During the year supplies of dried milk were also given in suitable cases, the number of applications received being as follows:—

	Number of Families.	Number of Expectant and Nursing Mothers.	Number of Children under five years.	Number of Packets Ordered.
Original Applications, ...	135	32	103	150
Repeat ,, ...	1,722	465	1,263	2,165
Total,	1,857	497	1,366	2,315

While the same scale of “necessitousness” is applied to applications for dried milk as to applications for fresh milk, the conditions of grant are somewhat different, for, while grants of fresh milk are refused to families whose income is over the scale, supplies of dried milk may be given at the wholesale rate. The

following summary shows the number of packets issued and the net cost falling upon the Corporation for the supplies of dried milk issued under these conditions:—

Price per Packet.	Number of Packets Issued.	Cost to Corporation.	Amount Recovered.	Net Cost to Corporation.
Full Price, ...	764	£52 3 0	£52 3 0	—
Part Price, ...	8	0 12 4	0 6 6	£0 5 10
Free, ...	1,543	105 17 5	—	105 17 5
Total, ...	2,315	£158 12 9	£52 9 6	£106 3 3

In all, 2,315 packages were distributed under the scheme, of which 764 were charged at full price, 8 at part price, while 1,543 were given free, the net cost to the Corporation being £106 3s. 3d.

SEWING, &c., CLASSES.

During the winter months a considerable amount of social and welfare work was carried on at the various Child Welfare Centres. This took the form of sewing and cookery classes, &c., as shown in the following table:—

Centre.	Nature of Class.	Period.	Day and Hours.	Average Attendance.
Caddens, ...	Sewing Class, ...	Nov. to Mar.	Mon., 7 p.m.	45
Do., ...	Play Centre, ...	Nov. to Mar.	Wed., 6 p.m.	36
Do., ...	Girls' Club, ...	Nov. to Mar.	Mon., 6 p.m.	23
tick, ...	Sewing Class, ...	Oct. to Mar.	Wed., 7 p.m.	45
hard Street, ...	Mothers' Club, ...	Sept. to June	Thurs., 2 p.m.	60
Do., ...	Play Centre, ...	Sept. to May	Mon. and Wed., 4.30 p.m.	20
hill, ...	Sewing Class, ...	Sept. to Mar.	Tues., 7 p.m.	45
Do., ...	Play Centre, ...	Sept. to Mar.	Thurs., 7 p.m.	35
Do., ...	Mothers' Club, ...	Sept. to Mar.	3rd Fri. every month, 7.30 p.m.	80
About 6 Cookery Demonstrations were given in the mothers' houses during the session.				
ngburn, ...	2 Play Centres, ...	Oct. to Mar.	Wed., 6.30 and 7.30 p.m.	50
Do., ...	Sewing Class, ...	Nov. to Mar.,	Mon., 7.30 p.m.	30
gston, ...	Sewing Class, ...	Oct. to Mar.,	Thurs., 7 p.m.	25
ttleston, ...	Sewing Class, ...	Oct. to April	Wed., 6.45 p.m. (3 sessions in month)	70
Do., ...	Cookery Class, ...	Oct. to April	Every 3rd Wed., 6.45 p.m.	60
Do., ...	Thrift Club, ...	Oct. to April	Wed., 6.45 p.m.	45
lgeton, ...	Mothers' Club, ...	Oct. to Mar.	Tues., 7.30 p.m.	70
let Road, ...	Mothers' Association, ...	Oct. to Mar.,	Wed., 7 p.m.	100
Do., ...	Singing Class, ...	Jan. to Mar.,	Tues., 7 p.m.	35
Do., ...	Men's Section, ...	Oct. to Mar.,	Fri., 7 p.m.	55
Do., ...	First Aid Class (Senior Girls), ...	Oct. to Dec.,	Mon., 7.30 p.m.	24
Do., ...	Children's Play Hour, ...	Oct. to May	Wed. and Fri., 10 a.m.	40
Do., ...	Sewing Class, ...	Feb. to April,	Tues., 2 p.m.	20
an Town Hall, ...	Sewing Class, ...	Oct. to Mar.	Thurs., 7 p.m.	40

These classes involve a considerable amount of work as will be seen from the description of the activities at Cowcaddens:—

The Mothers' Club was opened on Monday, 6th November, 1933, and continued until 26th March, 1934. The number on the register was 62 and the average attendance 45. There were nine sewing nights, when the women made garments for themselves and their children, as well as making down clothes bought at jumble sales. There were two competitions run for patching and darning and a written examination when the questions were set by the Clinic Doctor. There were four cookery demonstrations given by a voluntary teacher who also gave most useful and interesting demonstrations on the washing and care of woollen garments. During the session six lectures were given and a special social evening around the New Year was very successful, the programme being provided by students of Glasgow University and members of the Park Church Girl Guides. The closing social was run by the mothers themselves who provided the programme.

The attendances were larger than usual and the Club seemed to be much enjoyed by the members.

Fathers' Council.—The Fathers' Council in Govan District continued its activities throughout the winter 1933-34. The programme consisted of addresses by members of the staff, social evenings, and outings during the summer months. In the Govan District an endeavour has been made to organise a Voluntary Work Centre.

ANTE-NATAL CONSULTATIONS.

Glasgow Royal Maternity Hospital.—The total number of cases attending the ante-natal dispensary for the first time was 4,502 during 1933, compared with 5,017 in 1932, while the total attendances during the respective years were 15,022 and 15,286. During 1933, 3,006 cases were treated to a termination in delivery, of which 1,118 were attended in their own homes.

The number admitted to the ante-natal wards during 1933 was 1,266, compared with 1,220 in 1932.

At the infant consultations held at the Maternity Hospital there were 6,306 attendances, as compared with 5,943 during the previous year. The first attendances numbered 683.

ANTE-NATAL DISPENSARY—

	1931.	1932.	1933.
Number attending for first time, ...	5,947	5,017	4,502
Total attendances,	15,989	15,286	15,022
Number treated to a termination, ...	4,037	3,596	3,006
Number sent to Hospital—			
(a) For confinement,	2,226	1,656	1,428
(b) „ miscarriage,	135	109	86
(c) „ ante-natal treatment, ...	612	554	602
(d) „ ante-natal treatment and confinement,	322	290	337
(e) For ante-natal treatment and miscarriage,	62	33	37
Number treated on District—			
(a) For confinement,	1,274	1,493	1,106
(b) „ miscarriage,	18	15	12

ANTE-NATAL WARDS—

	1931.	1932.	1933.
Average number under treatment,	46	44	36
Number admitted,	1,294	1,220	1,266
Total days,	13,850	12,703	13,406
Condition on dismissal—			
(1) Recovered,	330	69	69
(2) Improved,	145	317	324
(3) Confinement completed, ...	771	732	703
(4) Died,	1	7	1
(5) No change,	52	94	73

INFANT CONSULTATION—

First Attendances,	873	675	683
Subsequent Attendances,	6,163	5,268	5,623
Total,	7,036	5,943	6,306

The total number of sessions at the Ante-natal Clinics during 1933 was 1,001, compared with 967 during the preceding year, the attendances totalling 34,049 against 33,009 in 1932. Primary attendances again show an increase, numbering 7,823, or 242 more than in the previous year, while the subsequent attendances, 26,226, were higher by 798. The rapid growth of this work during recent years following the introduction of the Rule of the Central Midwives Board making it compulsory for midwives to secure ante-natal supervision for those engaging their services has apparently lessened, and the position is now more stabilised. The increase last year is regarded as due to better appreciation by expectant mothers themselves of the benefits afforded by these clinics. The number of consultations and attendances at each centre are shown in the following table:—

ATTENDANCES AT ANTE-NATAL CLINICS, 1933.

	No. of Clinic Sessions.	No. of Attendances.		
		Primary.	Subsequent.	Total.
Partick,	46	351	924	1,275
Cowcaddens,	99	720	2,264	2,984
Maryhill,	104	498	1,950	2,448
Springburn,	104	673	2,376	3,049
Orr Street,	101	1,118	3,541	4,659
Shettleston,	98	557	1,940	2,497
Hutchesontown,	105	1,386	4,665	6,051
Govan,	98	1,117	3,227	4,344
Elderspark,	97	565	2,641	3,206
Richard Street,	97	606	1,939	2,545
Blawarthill,	52	232	759	991
	1,001	7,823	26,226	34,049

The following tables show (1) the age of mothers who attended and (2) the conditions requiring attention which were found:—

Ages of Mothers.	Partick	Cow-caddens	Mary-hill	Spring-burn	Orr Street	Hutche-son-town	Shett-leston	Govan	Elder-park	Richard Street	Blawart-hill	
—20 ...	25	51	31	29	53	100	26	85	36	36	7	79
—25 ...	89	229	109	190	300	406	134	284	146	184	67	236
—30 ...	112	196	151	197	326	362	138	308	165	168	65	288
—35 ...	77	144	108	137	234	270	141	232	104	117	49	113
—40 ...	29	72	71	89	138	180	75	140	77	57	31	59
—45 ...	11	12	17	26	44	48	31	41	19	25	9	83
+45 ...	1	2	—	—	9	1	—	2	3	3	—	21
Not Pregnant,	5	16	10	3	13	23	10	26	15	15	4	40
	349	722	497	671	1,117	1,390	555	1,118	565	605	232	721

Conditions Found	Partick	Cow-caddens	Mary-hill	Spring-burn	Orr Street	Shett-leston	Hutche-son-town	Govan	Elder-park	Richard Street	Blawart-hill	
Venereal Disease,	1	19	13	1	26	25	37	21	7	23	4	77
Varicose Veins,	52	82	139	72	145	100	140	67	51	136	43	27
General Debility,	39	238	182	85	169	90	488	140	57	129	30	47
Cardiac Disease,	9	1	5	7	53	14	44	32	37	3	8	13
Hyperemesis Gravidarum,	—	1	—	—	5	—	—	2	—	—	1	9
Alimentary Conditions,	91	28	292	90	115	8	602	178	59	372	40	75
Dentition (Bad),	145	298	330	250	249	304	419	387	156	436	109	83
Contracted Pelvis,	7	42	12	7	38	7	18	26	11	7	3	78
Kidney Disease (Albuminuria),	47	169	67	95	199	131	252	105	57	16	25	63
Respiratory Disease, ...	18	8	11	22	154	4	100	54	13	24	5	13
Haemorrhage, No apparent disease, ...	9	6	—	2	12	19	34	26	23	7	5	43
Other conditions,	66	122	11	109	77	79	155	219	170	17	47	12
	26	32	73	50	388	58	99	51	26	124	25	52
	510	1,046	1,135	790	1,630	839	2,388	1,308	667	1,294	345	1,52

The conditions found on medical examination are enumerated in the above statement, but as in many cases two or three causes of illness were present, the total number of conditions is much in excess of the number of mothers. The most frequent conditions requiring attention were those of the alimentary system (including constipation), general debility, varicose veins, and albuminuria.

As in former years, about 17 per cent. were primiparæ, as shown in the following summary:—

	Partick	Cow-caddens	Mary-hill	Spring-burn	Orr Street	Shett-leston	Hutche-son-town	Govan	Elder-park	Richard Street	Blawart-hill	
Primiparæ, ...	56	130	73	102	170	74	269	184	102	111	29	00
Multiparæ, ...	288	576	414	566	934	471	1,098	908	448	479	199	81
Not Pregnant,	5	16	10	3	13	10	23	26	15	15	4	40
Total, ...	349	722	497	671	1,117	555	1,390	1,118	565	605	232	721

The results, so far as known, as to whether delivery resulted at full term, prematurely, &c., are here given, together with the number of still-births:—

PREVIOUS YEAR'S CASES TERMINATED IN 1933.

	Partick	Cow-cad-dens	Mary-hill	Spring-burn	Orr Street	Shett-leston	Hutche-son-town	Govan	Elder-park	Richard Street	Blawart-hill	Total
... ve, ...	57	163	103	145	216	121	294	216	121	116	51	1,603
... ll-Births, ...	2	3	2	9	5	3	5	3	2	3	3	40
... ll-term, ...	48	153	103	149	218	119	289	212	121	117	53	1,582
... emature, ...	11	13	2	5	3	5	10	7	2	2	1	61
...ortion or Miscarriage, ...	—	3	4	3	2	—	6	1	1	1	—	21
...t District and no trace, ...	2	2	1	—	1	2	6	5	1	1	—	21
...t Pregnant, ...	1	—	1	—	1	1	3	1	1	—	—	9
...ed before Termination, ...	—	—	—	—	—	—	—	—	—	—	—	—
	62	171	111	157	225	127	314	226	126	121	54	1,694

Note.—Cases transferred from Partick to Govan (1); from Cowcaddens to Elderpark (1); and from Hutchesontown to Govan (2).

1933—CASES.

	Partick	Cow-cad-dens	Mary-hill	Spring-burn	Orr Street	Shett-leston	Hutche-son-town	Govan	Elder-park	Richard Street	Blawart-hill	Total
... ve, ...	278	536	350	476	856	405	967	834	387	432	175	5,696
... l-Births, ...	7	20	11	27	34	13	33	24	13	12	2	196
... l-term, ...	269	514	340	481	873	402	930	844	392	421	172	5,638
... mature, ...	16	42	21	22	17	16	70	14	8	23	5	254
...ortion or Miscarriage, ...	5	6	5	6	7	13	19	11	5	7	1	85
...t District and no trace, ...	3	7	3	5	6	1	17	7	1	8	—	58
...d before Termination, ...	—	—	—	3	—	1	2	—	1	—	1	8
... Pregnant, ...	5	16	10	3	13	10	23	26	15	15	4	140
... Terminated, ...	51	137	118	151	201	112	329	216	143	131	49	1,638
	349	722	497	671	1,117	555	1,390	1,118	565	605	232	7,821

Among the 7,535 patients whose pregnancy terminated in 1933 (excluding abortions) 44 deaths occurred, which is equivalent to a death-rate of 5·8 per thousand births; the rate was 5·6 for the preceding year. This higher mortality was almost entirely due to an increase in the deaths from non-puerperal causes. Of the 17 deaths from septic conditions, 10 were certified as puerperal septicaemia or fever only, 2 were associated with peritonitis, 1 each with phlegmasia alba dolens, retained placenta, and acute mastitis, and 2 with pneumonia. Other ante-natal deaths were as follows:—

Puerperal Hæmorrhage,	5
Puerperal Albuminuria and Convulsions,	3
Other Toxæmias of Pregnancy,	2
Embolism and Sudden Death,	1
Other Accidents of Childbirth,	3
Influenza,	1
Pulmonary Tuberculosis,	1
Tuberculous Meningitis,	1
Cancer,	1
Circulatory Diseases,	1
Respiratory Diseases,	6
Cellulitis of Face,	1
Malnutrition and General Debility,	1

Thus 13 deaths had probably little association with the puerperal state, although in some it may have been a contributing cause. Excluding these deaths and comparing with a rate of 5·90 for the city as a whole, the maternal mortality may be more correctly stated as 4·11. As regards the ante-natal service, it may be pointed out that only 25 per cent. of pregnant women attending the clinics came before the sixth month and 44 per cent. before the seventh month.

The number of still-births, 236, occurring among the pregnancies included in this analysis represents a rate of 3·1 per cent., compared with the average for the city of 4·0 per cent. The still-births among the cases which attended during the previous year amounted to 3·4 per cent.

A comparison of the births occurring at full time or otherwise shows that during 1933 premature births formed about 4·2 per cent. of the total, as compared with 3·6 per cent. for the previous year. Abortions equalled 1·4 per cent. of the pregnancies, compared with 1·2 in 1932.

The month of pregnancy at which the first attendance was made at the clinic is given below; almost two-thirds attended by the seventh month:—

Month of Attendance.	Partick	Cow-cadens	Mary-hill	Spring-burn	Orr Street	Shettleston	Hutchesontown	Govan	Elderspark	Richard Street	Blawarthill	Total
1 ...	2	—	—	1	—	5	10	—	—	2	—	20
2 ...	7	19	9	12	25	23	61	7	5	8	2	178
3 ...	13	32	25	34	44	24	78	23	10	19	9	311
4 ...	26	51	49	54	68	52	90	44	38	37	12	521
5 ...	56	88	62	94	118	57	213	68	64	73	20	913
6 ...	44	149	105	151	179	101	355	160	97	120	29	1,490
7 ...	110	195	167	198	323	131	308	288	144	204	44	2,112
8 ...	80	128	68	108	277	137	208	312	141	118	76	1,653
9 ...	6	44	2	16	70	15	44	190	51	9	36	483
At Pregnant,	5	16	10	3	13	10	23	26	15	15	4	140
	349	722	497	671	1,117	555	1,390	1,118	565	605	232	7,821

MATERNAL MORTALITY.

Enquiry into maternal deaths has been continued as a routine procedure during the year. This practice was begun at the close of 1932 under arrangement made by the Department of Health and the British Medical Association.

The following statement showing the maternal mortality deaths and rates is from figures supplied by the Registrar-General:—

STATEMENT SHOWING MATERNAL DEATHS AND RATE PER THOUSAND BIRTHS IN GLASGOW AND SCOTLAND IN THE YEARS 1929-1933.

	Deaths.					Rate per 1,000 Births.				
	1929.	1930.	1931.	1932.	1933.	1929.	1930.	1931.	1932.	1933.
Incidents of Pregnancy, ...	38	28	10	11	4	1.67	1.20	0.44	0.48	0.19
Puerperal Hæmorrhage,	25	28	17	23	28	1.10	1.20	0.74	1.01	1.31
Puerperal Septicæmia, including Post-abortion sepsis,	72	65	66	82	63	3.16	2.79	2.88	3.61	2.95
Septicæmia of Pregnancy, Albuminuria, Convulsions, ...	15	28	26	36	13	0.66	1.20	1.13	1.58	0.61
Other Puerperal Diseases,	40	51	27	27	18	1.75	2.19	1.18	1.19	0.84
Totals—Glasgow, ...	190	200	146	179	126	8.34	8.58	6.37	7.87	5.90
„ Scotland, ...	—	—	—	—	512	6.87	6.95	5.91	6.30	5.92

During the year 126 deaths from maternal causes occurred in the city, which is equal to a rate of 5.90 per thousand births. The respective figures for 1932 were 179 deaths and a rate of 7.87. The rate for 1933 is the lowest recorded during recent years, and compares with the highest of 8.79 in 1928, the greatest reduction having occurred in accidents of pregnancy, the rate for which was 0.19 in 1933, compared with 1.44 in 1928, although a higher rate of 1.67 was recorded in 1929. Toxæmias of pregnancy, &c., and other puerperal diseases were also definitely lower during last year. The tendency for certain causes of maternal death to decline in recent years may be noted, although the data should be interpreted with caution as maternal mortality has been intractable and liable to fluctuation. It may be suggested, however, that the minute attention now being paid to obstetrics is influencing the figures along with the greatly increased practice of ante-natal care, although much of this is, for various reasons, of an imperfect kind. It may also be pointed out that the correct ascertainment of causes of maternal death has reached a high level of accuracy, so that really comparable information is now available for yearly comparison. In the following table causes of death properly attributable to child-birth are separated from those due to other than purely maternal causes:—

GLASGOW.—MORTALITY PER THOUSAND BIRTHS FROM MATERNAL CAUSES.

AVERAGE, 1929-33.

Puerperal Sepsis,	...	...	...	...	...	2.27
Puerperal Albuminuria and Convulsions	other	than				
Toxæmias of Pregnancy,	...	...	...	...	...	0.56
Puerperal Haemorrhage,	...	...	...	...	...	0.52
Accidents of Pregnancy,	...	...	...	...	...	0.16
Other Puerperal Causes,	...	...	...	...	...	0.64
<hr/>						
Total Maternal Causes,	...	...	...	...	...	4.15
<hr/>						
Non-Maternal Causes,	...	...	...	...	...	1.45

Staphylococcal Pneumonia in a Maternity Hospital.—In July, 1933, 4 infants who had been born in a small maternity hospital died suddenly of pneumonia. The dates of sickening were 14th, 15th, 16th, and 17th July, and in each instance the infection proved fatal within 48 hours. Three of the infants had been apparently well on dismissal, but sickened within one or two days of leaving the hospital. On autopsy of 2 of the cases, death was shown to have been due to a staphylococcus aureus infection of the lungs. It was ascertained that almost all the remaining infants in the institution were harbouring the

staphylococcus aureus in the nasal and faucial passages, especially the former. In the circumstances, it was deemed unwise to allow further cases to be admitted, and on 7th August all the patients had been dismissed. After five days' closure, during which thorough disinfection of all possibly infected articles was carried out, new cases were admitted without any recurrence of the infection.

As this series of cases is uncommon and presents some features of epidemiological and bacteriological interest, a full description will be published elsewhere.

ULTRA-VIOLET RAY CLINICS.

No alteration has taken place in the arrangements for light treatment of children suffering from rickets, malnutrition, &c.

The number of consultations held weekly at Cochrane Street and Govan Town Hall remain the same as at the end of last year.

The installation and the results of treatment have been fully dealt with in previous reports, so that only the records of numbers treated are here given in respect of 1933.

RECORD OF ATTENDANCES AND CONSULTATIONS DURING 1933.

	Number of Clinics held.	Children, -1 year. Number of Attendances.		Children, +1 year. Number of Attendances.		Mothers. Number of Attendances.		Total Number of Attendances.	
		Prim.	Sub.	Prim.	Sub.	Prim.	Sub.	Prim.	Sub.
Cochrane Street, ...	148	50	453	437	10,874	26	266	513	11,593
Govan, ...	148	42	284	261	6,313	5	8	308	6,605
	296	92	737	698	17,187	31	274	821	18,198
		829		17,885		305		19,019	

AGES OF CHILDREN ATTENDING FOR THE FIRST TIME—					Cochrane Street.	Govan.
-1 year,	...	...	...	...	50	42
-2 years,	...	...	...	...	283	138
-3 years,	...	...	...	...	98	56
-4 years,	...	...	...	...	41	28
-5 years,	...	...	...	...	13	11
+5 years,	...	...	...	...	2	28
					487	303

REASONS FOR TREATMENT OF CASES ATTENDING FOR FIRST TIME.

CHILDREN—					Cochrane Street.	Govan.
Rickets.	{ 1. Prophylaxis, ... ..	...	...	...	1	1
	{ 2. Early Rickets, ... ..	...	...	...	125	63
	{ 3. Moderate Rickets, ... ..	...	...	...	129	58
	{ 4. Marked Rachitic deformity, ... ..	...	...	...	60	43
Rickets c. Tetany,					—	—
Debility after Infectious Disease,					9	31
Debility after Acute Illness,					14	26
Debility—weight stationary, or losing, or not thriving,					86	42
Bronchitis,					10	16
Malnutrition,					27	11
Mentally Defective,					—	—
Nervous Instability,					—	3
Skin Diseases,					7	—
Others,					11	1
Cervical Adenitis,					8	8
					487	303
MOTHERS—						
Pregnancy,					26	5
Nursing Mothers,					—	—
					26	5

INFANT VISITATION.

Under the scheme of infant visitation every birth is visited if the notification does not state that a medical practitioner has been in attendance, and the following table shows the record of those visited, together with certain information obtained:—

	1931.	1932.	1933.
Inquiry cards returned,	18,007	18,148	17,524
Full information obtained,	17,273	17,455	16,894
Doctor found in attendance,	6	9	7
Wrong address,	—	—	—
Others,	728	684	623
Inquiry cards issued,	17,994	18,157	17,357

Of those for whom full information was obtained—

Legitimate,	16,225	16,849	16,127
Illegitimate,	1,057	626	625

Born at full term,	16,333	16,376	15,734
Premature births,	949	1,099	1,018

Condition of Infant at Birth—

Well nourished,	14,276	14,659	14,159
Fairly nourished,	1,642	1,471	1,347
Badly nourished,	608	601	549
Still-born,	756	744	697

Nature of Feeding at First Visit—

Breast,	13,769	14,013	13,520
Artificial,	1,757	1,730	1,615
Breast and Artificial,	528	497	478
Still-born,	756	744	697
Dead at First Visit,	470	491	442
Adopted,	2	—	—

In addition to home visitation, the nurses attend the Child Welfare Consultations in their own districts. They thus have an opportunity of reporting to the doctor any illness or condition requiring medical treatment, and of following up the case afterwards to see that the treatment recommended is carried out.

TOTAL NUMBER OF VISITS PAID BY NURSES.

	1932.		1933.	
	Primary.	Sub.	Primary.	Sub.
Routine visits, ...	23,445	50,014	23,054	61,229
Special visits, ...	5,610	7,262	4,341	4,096
Puerperal Fever, ...	1,079	847	1,072	961
Ophthalmia, ...	1,031	4,968	1,051	5,360
Ante-natal, ...	2,140	823	2,155	874
Others, ...	519	184	401	161
Total, ...	33,824	64,098	32,074	72,681
	97,922		104,755	

The children found alive on the occasion of the first visit by the Health Visitor are classified in the following table under three groups:—

	Well.	Fair.	Bad.	Total.
1930, ...	14,031	1,379	119	15,529
1931, ...	14,236	1,493	116	15,845
1932, ...	14,993	1,276	127	16,396
1933, ...	15,047	1,110	101	16,258

Generally speaking, those classified as “well” on the occasion of the first visit were not revisited. The following table is a summary of results found at final visit:—

	Still Good.	Much Improved.	Slightly Improved.	No Improvement.	Worse.	Total.
1930, ...	2,775	312	37	11	—	3,135
1931, ...	3,298	253	25	8	—	3,584
1932, ...	3,883	405	14	3	—	4,305
1933, ...	7,227	399	10	4	—	7,640

GLASGOW INFANT HEALTH VISITORS' ASSOCIATION.

Working in association with the Public Health Department is the Glasgow Infant Health Visitors' Association, to whom are reported children whom it is desirable to keep under observation during a longer period than is possible by the official visitors. The number of visitors fluctuates around 300.

As the period of visitation generally extends over the first twelve months of life, a complete year must elapse before the results of the visitation can be summarised.

The following is a summary of the results for the years 1929-1932:—

Year.	Year old.	Removed.	Dead.	Ceased to be visited.	Visits Un-necessary.	No In-formation.	Visits Resented.	No Visitor.	Total.
1930,	2,181	386	266	10	10	3	2	—	2,858
1931,	1,996	298	213	7	6	—	4	—	2,524
1932,	1,817	330	202	1	8	—	1	—	2,359

DOMESTIC HELPS.

Since the scheme for supplying Home Helps was inaugurated in Glasgow towards the end of 1924, there has been an increasing demand for their services. In the first year there were only 17 applications, while in 1933 the total had reached 257. The scale of payment is 5s. per day, which is guaranteed by the Corporation. Assistance of this kind for those who can pay this rate is arranged privately, and is not included in the records shown below. Quite a number are being placed in this way as the scheme becomes better known.

Payment for the services of helps is in accordance with a scheme of “necessitousness” based on the scale applicable to grants of milk and meals under the Child Welfare Scheme, with a minimum charge of one shilling per day. The following is a summary of the payments made for services rendered:—

Cases. 1933.	Number of Days Attended. 1933.	Rate per Day.	Amount Paid by Patients. 1933.
172	2,100	1/-	£105 0 0
33	438	1/6	32 17 0
23	240	2/-	24 0 0
18	189	2/6	23 12 6
7	72½	3/-	10 17 6
3	34	3/6	5 19 0
1	9	4/-	1 16 0
1933, ... 257	3,082½		£204 2 0
1926, ... 107	1,407		102 2 6
1927, ... 118	1,361		105 8 6
1928, ... 132	1,656½		129 11 6
1929, ... 195	2,476		195 2 6
1930, ... 204	2,460½		173 9 0
1931, ... 261	3,331		233 13 6
1932, ... 249	3,346		219 2 6

During 1933, 41 individual helps attended 257 cases for a total of 3,082½ days, or an average of 12 days per case. The amount paid in fees was £204 2s. The helps are remunerated at the rate of 5s. per day, so that the balance falling to be met by the Corporation was £566 10s. 6d.

MATERNITY BUNDLES.

In connection with the Child Welfare movement, a very definite need has been met by the issue of maternity bundles, and in accordance with the practice of recent years these are not issued until the birth actually takes place, as in necessitous cases to which they are issued, it was found that quite frequently the garments supplied were misused. In 1933 bundles, or part bundles, to the number of 1,090 were supplied, compared with 1,230 in 1932 and 1,141 in 1931. Receipts from those who could make a part payment amounted to £90 1s. 6d., as against £128 3s. 6d. received from this source during the preceding year.

DAY NURSERIES.

Including the Phoenix Park Kindergarten, there are four Centres with nursery accommodation. The total attendances of children at these Centres during 1933 was 24,803, in comparison with 23,021 during the previous year.

The following figures show the number of attendances, &c., at each Centre during the year:—

Nursery.	Number of Days open.	Total Attendances during the year.	Average.	Maximum number in one day.	Accommodation for.
Bridgeton, ...	243	8,419	35	48	40
Cowcaddens, ...	230	7,079	31	36	36
Phoenix Park Kindergarten, ...	189	5,131	27	32	31
Kingston, ...	221	4,174	18	29	30

Day Nurseries.—Milton and Hutchesontown Day Nurseries, which were closed towards the end of 1932, were not reopened during the past year, and this to some extent may explain the increase in the attendances at each of the four remaining nurseries, despite the fact that there were outbreaks of measles, German measles, and chickenpox among the children in attendance at Cowcaddens.

With regard to Phoenix Park Kindergarten, Miss Winifred Anderson contributes the following notes:—

“The past year has been remarkably free from infectious illness at the Kindergarten, and, apart from a few cases of chickenpox and mumps, the children's health has been very good.

“The Kindergarten has now been in existence for twenty years and a new generation is beginning to appear. We have the son of a former Kindergarten boy now and the two nephews of another, and on the waiting list is the name of a little girl whose parents were both Kindergarten children; another name on the list is that of a three months' old baby whose ex-Kindergarten mother is determined to secure a place for her little daughter when the right time comes.

"The year has brought not only better health to the children, but much happiness, many varied experiences, growth of power of self-control and of social feeling.

"Some of our visitors during the year have come from as far afield as Quebec, China, Australia, and the United States, and they have included inspectors, teachers, students, nurses and social workers. The qualities upon which visitors comment most in the children are their look of health and cleanliness, their capability and their obvious enjoyment of all that goes on in the day.

"From the mothers of children who have left during the year to enter the elementary schools, we have heard of the teachers' appreciation of the Nursery School training."

JUVENILE UNEMPLOYMENT CLASSES, &c.

These classes, which have been carried on for a number of years in conjunction with the Education Department, were discontinued at the end of 1932.

During the year 32 pupils from the School of Domestic Science received a course of training.

COUNTRY HOMES.

The following analysis shows that 370 children were admitted under the Child Welfare Scheme to the two Country Homes during the year, the two principal reasons for admission being rickets and malnutrition:—

	Scots-toun.	Mount Blow.	Total.
Rickets,	26	55	81
General Malnutrition and Debility, ...	154	61	215
Bronchitis,	13	—	13
Debility after acute illnesses,	4	46	50
Anæmia,	3	2	5
Nervousness,	2	—	2
Others,	2	2	4
	204	166	370

The dismissals during the year were 194 from Scotstoun and 164 from Mount Blow. The condition on dismissal is summarised in the following statement:—

	Scots-toun.	Mount Blow.	Total.
Much improved,	174	85	259
Not improved,	—	—	—
Parents leaving City,	2	—	2
Transferred suffering from infectious disease,	6	8	14
Taken home by parents (fretting, etc.), ...	3	24	27
Died,	1	—	1
For admission to other Institutions, ...	4	1	5
Sent home,	4	1	5
Contacts with cases of Infectious Disease sent home,	—	45	45
	194	164	358

Of the total, 358, discharged from Country Homes during the year, 259 were much improved, while 14 were transferred suffering from infectious disease, and 45 others dismissed as contacts with these. During the preceding year the respective figures were 399 much improved, 44 transferred with infectious disease, and 99 sent home as contacts.

MIDWIVES AND MATERNITY HOMES ACT, 1927.

Five applications for registration were made during the year, all of which were granted. One was in respect of change in management, 1 in respect of a home previously exempted, 2 were in respect of homes removed to new premises, and 1 was a new application. Four certificates of registration were withdrawn.

The following is the number of maternity homes on the register at 31st December, 1933:—

	Registered.	Exempted.
Maternity Hospitals,	2	—
General Infirmarys and Hospitals,	1	4
Nursing and Maternity Homes,	47	3
	<hr/> 50	<hr/> 7

MIDWIVES (SCOTLAND) ACT, &c., 1915-27.

During 1933 there was a decrease of 3 in the midwives who notified their intention to practise, so that the number now on the register is 253, compared with 256 at the end of 1932. The number of these entitled to registration by examination increased from 181 to 189; while those registered as having been in practice in 1914 numbered 64, or 11 less than at the end of the preceding year. Of those who ceased practice, 6 died and 4 removed from the city, while 17 who were registered by examination notified their intention to practise for the first time. A few dropped out of practice.

There was a reduction of 1,230 in the number of live and still-births notified during the year. Those occurring in the practice of midwives were fewer by over 900, which is a somewhat similar reduction to that of the preceding year. The number of births attended by outdoor maternity nurses, &c., was also lower, in this instance by 201 cases. There was a reduction of 431 in the births attended by doctors at home, which was counterbalanced to a certain extent by an increase of 317 in the medically-attended births in institutions. The inability of those who no longer have Maternity Benefit, either to equip their beds or provide home attention, is a feature of the present economic position, and many women at the last moment present themselves at one or other of the general hospitals and request admission for their confinement.

The following table summarises the numbers for the year, with relative figures for the two preceding years:—

		1931.	1932.	1933.
Midwives in Practice during year,	...	259	256	253
THE QUALIFICATIONS FOR CERTIFICATION UNDER ACT, HELD BY THE FOREGOING WERE—				
In Practice, December, 1914,	... ..	87	75	64
C.M.B. (Scotland) Examination,	... ..	133	144	149
Other recognised qualifications,	... ..	39	37	40

In the following table some indication is afforded of the number of births attended during the year by individual midwives. It would seem that of the 6,933 births attended by midwives, 4,774 occurred in the practice of midwives with 50 confinements or more in the year:—

BIRTHS NOTIFIED BY MIDWIVES.

		1931.		1932.		1933.	
		Births.	Midwives.	Births.	Midwives.	Births.	Midwives.
Under 50 Notifications,		2,311	145	1,739	132	2,159	140
50-100	...	2,874	40	3,264	48	2,139	31
100-200	...	3,164	23	2,663	20	2,419	19
200-300	...	456	2	200	1	216	1
		8,805	210	7,866	201	6,933	191

STILL-BIRTHS NOTIFIED BY MIDWIVES.

		Midwives.			Still-Births notified.		
	Notifications.	1931.	1932.	1933.	1931.	1932.	1933.
1-5,	...	105	78	71	205	156	129
6-7,	...	5	3	1	36	20	6
		110	81	72	241	176	135
	Percentage of Births attended, ...	...	...	...	2.7	2.2	1.9

1930,	...	...	...	In 93 cases, Doctors assisted.
1931,	...	...	...	In 83 " " "
1932,	...	...	...	In 64 " " "
1933,	...	...	...	In 55 " " "

The figures in the two following summaries contain records of ophthalmia occurring in the practice of midwives, so that the numbers are not the same as the actual cases referred to in other sections of this Report.

CASES OF OPHTHALMIA NEONATORUM OCCURRING IN PRACTICE OF MIDWIVES.

Notifications.	Midwives.			Cases notified.		
	1931.	1932.	1933.	1931.	1932.	1933.
1-5,	65	65	69	160	157	142
6-10,	16	14	10	122	115	76
11-15,	7	6	5	91	72	64
16-20,	3	4	1	54	68	16
21-25,	—	1	—	—	33	—
Over 25,	—	—	2	—	—	64
	91	90	87	427	445	362
Percentage of Births attended,				4·8	5·7	4·6

CASES OF PUERPERAL FEVER OCCURRING IN PRACTICE OF MIDWIVES.

	Midwives.			Cases.		
	1931.	1932.	1933.	1931.	1932.	1933.
1 Case,	45	44	33	45	44	33
2 Cases,	21	14	9	42	28	18
3 „	12	7	8	36	21	24
4 „	3	5	—	12	20	—
5 „	2	4	—	10	20	—
6 „	—	2	1	—	12	6
7 „	1	—	—	7	—	—
8 „	—	—	—	—	—	—
	84	76	51	152	145	81

NUMBER OF REQUESTS FOR ASSISTANCE TO MEDICAL PRACTITIONERS IN CASES OF EMERGENCY UNDER RULE.

Notifications.	Midwives.			Requests made.		
	1931.	1932.	1933.	1931.	1932.	1933.
Under 10,	81	84	78	327	315	320
„ 20,	34	41	32	500	611	400
„ 30,	22	20	24	544	483	572
„ 40,	14	11	11	467	382	359
„ 50,	6	3	5	261	126	222
Over 50,	11	10	5	656	600	286
	168	169	155	2,755	2,517	2,159

During the year there were 2,159 occasions on which medical help was called by midwives, which represents 31 per cent. of the total births occurring in the practice of midwives, and compares with 32 per cent. in 1932 and 31 per cent in 1931. Details of the nature of emergency are not given this year, but the following indicates the period during which medical assistance was called:—

NATURE OF EMERGENCY.

	1931.	1932.	1933.
In all cases in which a woman during pregnancy, labour, or lying-in appears to be dying or is dead, ...	1	3	—
PREGNANCY.—In cases of a pregnant woman, where there is any abnormality or complication, ...	128	126	97
LABOUR.—In the case of a woman in labour at or near term, when there is any abnormality or complication,	1,867	1,675	1,576
LYING-IN.—In the case of a lying-in woman, when there is any abnormality or complication, ...	333	346	201
THE CHILD.—In the child, when there is any abnormality or complication,	407	357	275
Cannot be classified,	19	10	10
Total,	2,755	2,517	2,159

DEATHS (NOTIFIED BY MIDWIVES) BEFORE A DOCTOR

WAS IN ATTENDANCE,	— mothers,	14 infants.
LAYING OUT THE DEAD,	4 adults,	2 infants.
ARTIFICIAL FEEDING,	34 Notifications.	

INTIMATION OF EXPOSURE TO INFECTION.

DISEASE.	1931.	1932.	1933.
Puerperal Fever,	99	92	66
Measles,	21	4	2
Scarlet Fever,	11	15	19
Diphtheria,	2	3	3
Pneumonia,	2	5	8
Erysipelas,	2	2	1
Enteric,	—	—	—
Chickenpox,	3	—	1
Whooping- Cough,	4	—	2
Pyrexia,	29	41	11
Others,	7	3	11
Pemphigus,	10	8	9
Influenza,	—	—	2
Venereal,	—	—	1
	190	173	136

Fees to Doctors in Emergency Cases.—In the following table the total amount of accounts for the year ending November is shown, that being the period at which doctors' accounts are made up:—

Years ended November, 1922-25 (Average),	...	...	£1,629	0	6
Do. do., 1926-30, do.,	...	...	1,690	14	6
Do. do., 1932,	...	...	1,887	10	0
Do. do., 1933,	...	...	1,642	10	0

The practice of issuing accounts with the object of recovering some part of the fee, which was begun as from June, 1922, has been continued, and during the past year £234 5s. 6d. has been so recovered, while £18 18s. was withdrawn from medical practitioners' accounts, and accounts for £2 12s., were deleted.

OPHTHALMIA NEONATORUM.

During the year 890 cases of ophthalmia neonatorum were notified, compared with 1,013 in 1932. Analysis of these notifications indicates that the greater number of the cases are reported by institution nurses and midwives.

CASES OF OPHTHALMIA NEONATORUM ACCORDING TO NATURE OF ATTENDANCE AT BIRTH.

Doctors,	...	...	...	...	...	...	39
Institutions,	...	...	...	...	...	...	98
Institution Nurses,	...	...	...	...	...	...	391
Midwives,	...	...	...	...	...	...	362
							<hr/> 890 <hr/>

An analysis has been made, both clinical and bacteriological, of all cases notified. The following is the clinical analysis of the 890 notifications:—Ophthalmia, 265; purulent conjunctivitis, 167; simple conjunctivitis, 275; dacryocystitis, 9; blepharitis, 3; sty, 7; normal, 164. The period after birth within which the first signs of inflammation appeared is given as follows for the whole series, i.e., within 12 hours, 61 cases; between 12 hours and 4 days, 218 cases; between 4 and 8 days, 257; and over 8 days, 189 cases. This period is important as regards gonococcal infection as it indicates the probable source of infection. Thus of the total cases, 27 in number, due to this cause, in 3 the first signs appeared within 12 hours after the birth of the child, in 11 between 12 hours and 4 days, in 5 between 4 and 8 days, and in 8 later than 8 days.

Routine examination for the causative organisms was made in every case reported showing signs of catarrhal inflammation. The results are given in the following table which has been prepared in accordance with the reports and advice of the City

Bacteriologist, who has undertaken the examination and classification of the specimens:—

	Ophthalmia.	Purulent Conjuncti- vitis.	Simple Conjuncti- vitis.	Normal.
Gonococcus,	27	—	—	—
Staphylococcus,	50	26	12	—
Diphtheroid,	79	72	144	20
Gram-positive Diplococcus,	45	30	49	4
Gram-positive Bacillus and Diplococcus,	3	1	1	1
Gram-positive Bacillus,	6	2	4	3
Koch-Weeks Bacillus,	8	8	2	—
Streptococcus and Staphylococcus,	1	1	—	—
Gram-negative Bacillus (resembling Coliform Bacillus),	5	3	5	—
Gram-negative Bacillus and Gram- positive Bacillus,	—	—	—	—
Streptococcus,	2	1	1	—
Morax-Axenfeld Bacillus,	2	—	5	—
Pneumococcus,	2	2	—	—
Gram-negative Diplococcus Group,	1	1	—	—
No Organism,	34	20	52	136
	265	167	275	164

Dacrocystitis—Staphylococcus,	5
Diphtheroid,	1
Gram-positive Diplococcus,	2
Gram-positive Bacillus,	1
Stye —Staphylococcus,	7

Of the total cases, 55 were removed to hospital, and 78 attended hospital for outdoor treatment and made 434 attendances. The others were treated at home or at the Child Welfare Centres by the nurses, who made 6,411 visits in this respect.

Analysis of Indoor Cases.—The number of admissions was 80, including cases occurring outwith Glasgow. Two cases were readmitted after dismissal. Bacteriological examination of the 80 cases showed the following result:—Gonococcus, 25; Staphylococcus, 6; diphtheroid, 24; gram-positive diplococcus, 4; gram-positive diplococcus and bacillus, 2; Koch-Weeks bacillus, 1; streptococci, 1; no organism, 17; total 80.

The Wassermann test for syphilis was performed in 72 of the 80 cases. In no case was the test positive, and in none of the children was there any evidence of a syphilitic infection.

Results of Treatment.—The results in the gonococcal group of cases were very satisfactory. Of the 27 cases occurring in the city, all recovered with no corneal defect. Of the 8 cases admitted to hospital from outside areas, there was corneal scarring in 2 instances in one eye. In one of these patients there was no impairment of vision, but in the other there was very little, if any, vision in the affected eye. Two children died while in hospital, but the eye condition in both cases was restored to normal before death.

In the non-gonococcal group the total number recovered without defect.

PUERPERAL FEVER AND PUERPERAL PYREXIA.

Puerperal Fever.—The relative figures showing cases, deaths, and rates for the past 10 years are tabulated here for comparison:—

	Cases.	Deaths.	Case Mortality per cent.	Cases per 1,000 Births.	Deaths per 1,000 Births.
1924. ...	239	61	25.5	9.5	2.4
1925, ...	300	68	22.7	11.8	2.3
1926 (Old City),	307	69	22.5	12.6	2.8
1927, ...	277	61	22.0	11.7	2.6
1928, ...	413	89	21.5	17.5	3.8
1929, ...	516	86	16.7	22.6	3.8
1930, ...	598	86	14.4	25.6	3.7
1931, ...	663	71	10.7	28.9	3.1
1932, ...	710	83	11.7	31.2	3.7
1933, ...	543	68	12.5	25.4	3.1

Puerperal fever shows a considerable reduction in incidence this year, with a corresponding fall in the number of deaths. The case-rate per thousand births has fallen to the 1930 rate and the death-rate has fallen to the same level as that of 1931. A slight rise, however, in case-mortality falls to be recorded. The total number of confirmed cases, viz., 543, is comparable with the 1929 record, and denotes a favourable decline for the year.

Notifications.—The total number of notifications of puerperal fever and puerperal pyrexia amounted to 964, of which 934 were confirmed, the remaining 30 being mostly composed of abortion phases. Three hundred and ninety-four notifications alone were in respect of puerperal fever, as compared with 570 of puerperal pyrexia, of which 219, or 37 per cent., should have been recorded as puerperal fever, in contrast to 47, or 11 per cent., of alterations from puerperal fever to puerperal pyrexia.

Hospitalisation—Puerperal Fever.—Of 543 confirmed cases of puerperal fever, 339, or 62 per cent., were treated in Local Authority isolation hospitals; 159, or 29 per cent., in other hospitals, leaving 45, or 9 per cent., at home. This is a remarkably constant figure for hospitalisation of puerperal sepsis in Glasgow.

Puerperal Pyrexia.—Of puerperal pyrexias, on the other hand, 74, or 18 per cent., of confirmed cases received attention in fever hospitals; 185, or 47 per cent., in maternity institutions; and 132, or 35 per cent., were kept at home. No additional beds were created during the year, but centralisation of suspect cases in a large Local Authority general hospital with obstetrical and gynaecological facilities has been arranged.

Distribution in Time—Puerperal Fever.—The monthly incidence of cases was around 40, with the exception of February which showed 60 and November with 55, the lowest being October with 28, followed by January and April with 37 and 39 respectively.

Puerperal Pyrexia. — Puerperal pyrexia ranged below 40, again showing the lowest number, viz., 18 in October, and highest, viz., 42 in May, followed by 37 in February and April.

Graphically, this is shown to have no relationship to the scarlet fever and erysipelas curve of the city generally. The increased prevalence of scarlatinal infections, associated with the increased home treatment of this affection and the possible widespread carrier state as regards streptococci, did not cause any apparent rise in the incidence of puerperal fever. Indeed, it is very doubtful if immunity to scarlet fever has any direct bearing on non-susceptibility to puerperal infection.

SEASONAL DISTRIBUTION OF PUERPERAL FEVER, PUERPERAL PYREXIA, AND STREPTOCOCCAL INFECTIONS.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Puerperal Fever, ...	37	60	55	39	51	43	43	41	41	28	55	50	543
Puerperal Pyrexia,	30	37	34	37	42	36	35	36	27	18	29	30	391
Scarlet Fever, ...	677	482	586	497	725	508	423	515	781	1,120	1,160	904	8,378
Erysipelas, ...	107	65	91	72	86	73	46	64	96	131	173	113	1,117

Distribution in City Wards—Puerperal Fever.—The high incidence in Shettleston and Gorbals with 20 cases, in Govan and Provan with 17 cases, and 16 in Dalmarnock, is contrasted with no cases in Langside and Pollokshields; 1 in Yoker and Knightswood, Exchange, and Kelvinside; and 2 in each of the wards Camphill and Cathcart. A better index, however, is the case-rate per thousand births, Blythswood showing the highest incidence with 47 and a death-rate of 5, Dennistoun being next with a rate of 26 and a death-rate of 5, whereas Calton and Cathcart show an incidence of 5, with a death-rate of 1 per thousand in the former; Cowcaddens, Camphill, Govanhill, North Kelvin, Woodside, Cowlares, and Parkhead are almost equal, viz., around 10 per thousand births. The death-rate, however, is highest in Park Ward with 10 per thousand births; followed by Parkhead, 8; Kelvinside and Whiteinch, 7 each; Cowcaddens, Woodside, and Exchange, 6; while no deaths occurred in Langside, Cathcart, Pollokshields, Govan, Partick West, Maryhill, Townhead, Springburn, and Cowlares. From this it will be evident that the case-incidence rate is lowest in the better-class wards generally and remarkably high in Blythswood Ward, whereas the death-rate is highest in Park Ward, even allowing for the transfer of deaths to their home addresses.

Attendance at Birth.—The table shows the confirmed cases, 543 of puerperal fever and 391 of puerperal pyrexia, with their incidence in doctors, midwives, and institutional practice. This system of allocation is not quite satisfactory, but may be taken to indicate that the more simple the labour, the less the incidence of complicating febrile conditions. The proportional incidence in midwives, doctors, and institutional cases is as 1:2:4, whereas the death-rate is as 1:3:6. It is noteworthy that well-run maternity homes and hospitals show excellent results.

Abortions.—The table also shows the attendance on abortions in relation to the incidence of puerperal fever and puerperal pyrexia. Of the total 108 fevers, 15 deaths fall to be recorded, whereas no deaths occurred in the 45 pyrexias. The incidence of abortions in the city generally, apart from hospital admissions, is unknown. Of the 108 fevers, 32 were known to have been curetted, 54 were complete abortions, 2 inevitable, and 20 incomplete abortions. Of the 45 pyrexias, 12 were known to have been curetted, 5 were complete, 4 inevitable, and 21 incomplete abortions; also 1 hysterectomy, 1 ectopic pregnancy, and 1 hysterotomy.

Puerperal Pyrexia.—Puerperal pyrexias numbered 391, with 14 deaths. Administratively, the majority of the fatal infections would fall to be dealt with under the Public Health (Infectious Disease) Regulations (Scotland), 1932, viz., the respiratory infections (pneumonia and phthisis), and the remainder under the Maternity and Child Welfare Hospital provisions, quite apart from the Puerperal Fever and Puerperal Pyrexia Regulations of 1929. Of these patients, 65 per cent. were treated in hospital. A sample survey of morbidity occurring in the first six months of the year was made at the request of the Department of Health, when 11,675 schedules were returned. This included other morbid states than those notifiable under the Regulations.

Classification of Pyrexias — Respiratory. — Bronchitis, 20 (1 death); pneumonia, 17 (6 deaths); phthisis, 13 (5 deaths); influenza, 9; epistaxis and laryngitis, 5; pleurisy, 2; total, 66 (12 deaths). *Circulatory.*—Thrombosis, 1 (1 death); phlebitis, 2; varicose veins, 1; total, 4 (1 death). *Blood.*—Anæmia, 1; total, 1. *Joints and Muscles.*—Rheumatism, 3; total, 3. *Urinary.*—Nephritis, 1; pyelitis, 33; albuminuria, 6 cystitis, 3; total, 43. *Digestive.*—Appendicitis, 2; tonsillitis, 2; enteritis, 2; constipation, 17; hæmorrhoids, 1; acute yellow atrophy of liver, 1 (1 death); total, 25 (1 death). *Metabolism.*—Alcohol poisoning, 2; eclampsia, 2; exophthalmic goitre, 1; total, 5. *Lactation.*—Mastitis, 85; engorged breasts, 14; fissure of nipples, 9; total, 108. *Bacterial Infections.*—Septic finger, 2; cellulitis of leg, 1; erysipelas, 1; scarlet fever, 1; dysentery, 1; dermatitis, 1; total, 7.

Central Nervous System.—Neuralgia, 1; total, 1. *Psychological.*—Mania, 1; total, 1. *Accidents of Pregnancy.*—Incomplete abortions, 20; inevitable abortions, 3; curetted incomplete, 11; hydatid mole, 2; hysterotomy, 1; complete abortion, 1; total, 38. *Accidents of Childbirth.*—Cæsarean section, 6; contracted pelvis, 2; instrumental delivery, 4; perineal tears, 7; vaginal tears, 2; sub-involution, 9; adherent placenta, 2; breech, 3; cervicitis, 1; maternal exhaustion, 1; shock, 1; difficult labour, 1; multiple birth, 1; total, 40. Pyrexias of undefined origin, 49. The same standard of definition of “Puerperal Pyrexias” was maintained this year. The above group embraces any febrile upsets of unexplained cause lasting not more than two days.

Due attention should be paid to lactation, respiratory affections, and digestive and urinary disorders. Much valuable preventive work might be done in education of pregnant women in the proper ante-natal care and attention to the hygiene of the breasts and excretory functions.

Altered Diagnoses.—There were 30 cases, 23 being notified as fever and 7 as pyrexia. Of the 23 fevers, 14 were complete abortions, 3 incomplete abortions, 2 threatened abortions, and 1 inevitable abortion. In 2 cases the diagnosis was altered to menstruation, and 1 case to cervical erosion, not pregnant. Of the 7 pyrexias, the diagnosis was altered to missed abortion, to simple abortion and pyelitis, to pyelitis, and to pneumonia (who died within twelve hours of confinement) in 1 case; 3 were found to have “no pyrexias.”

Bacteriological Examinations.—Examinations of swabs and specimens of blood submitted to the City Bacteriologist numbered 115, of which 15 proved to be positive for hæmolytic streptococci. This is a definite increase in the use of the bacteriological facilities available.

Nursing Services.—The Glasgow District Nursing Association again came to our aid in supplying this needful nursing service. Thirteen patients were attended by Queen’s Nurses, with a total of 151 visits; 123 recommended by practitioners; and 1 by the Department of Public Health.

Consultant Services.—The panel of eight consultants undertook this work and were called upon for 24 visits. Fifteen of the patients were removed to hospital, where 2 died; 1 died at home. On three occasions a consultant was called in for a puerperal condition outwith the scope of the Regulations.

Maternity Homes.—A survey of these institutions under the Midwives and Maternity Homes (Scotland) Act, 1927, mostly on the occurrence of a case of puerperal fever, reveals much in the maintenance standards, and especially in lavatory facilities and keeping of records, which require improvement.

PUERPERAL FEVER AND PYREXIA FOR THE YEAR 1933.

CASE AND DEATH-RATES ACCORDING TO ATTENDANCE AT BIRTH.

Relationship of Abortion Attendance to Incidence of Puerperal Fever and Puerperal Pyrexia.

	Total Cases.	Cases per 1,000 Births.		Deaths.		Deaths per 1,000 Births.		Case Mortality per cent.		Abortions.		Abortion Deaths.		Case Mortality per cent.					
		Fever.	Pyrexia.	Fever.	Pyrexia.	Fever.	Pyrexia.	Fever.	Pyrexia.	Fever.	Pyrexia.	Fever.	Pyrexia.	Fever.	Pyrexia.				
Doctors, { Doctors only, ... Doctors and Midwives, ... Doctors and District Nurses, ...	60 29 18	12 4 3	107	19	20.9	3.7	16	2	3.1	0.4	14.9	10.5	27	2	3	—	11.1	—	
Total		107	19																
Midwives { Midwives only, ... Midwives calling Doctors, ...	61 20	19 4	81	23	11.7	3.3	10	1	1.4	0.1	12.3	4.3	1	1	—	—	—	—	
Maternity Hospital—Indoor, ... " " Outdoor, ... Local Authority Hospitals, ... Govan Maternity Cottage Hospital, ... Women's Hospital, ... Confined outside City—Nursed in Glasgow, ... " " per Glasgow Institutions, ... No one (Abortions), ... Other Institutions (Infirmaries, Fever Hospitals, etc.), ...	130 106 54 1 8 53 3	142 140 39 — — 24 4	40.7 23.7 21.4 — — — —	44.5 31.4 15.5 — — — —	20 8 5 — 3 9 2	4 1 5 — — — 1	6.3 1.8 2.0 — — — —	1.3 0.2 2.0 — — — —	15.3 7.5 9.2 — — — —	2.8 0.7 12.8 — — — —	13 3 7 — — 2 —	10 4 1 — — — —	1 1 1 — — — —	—	—	7.6 33.3 — — — — —	—	—	
		543	391	24.1	17.3	73	14	3.2	0.6	13.4	3.6	108	45	15	—	—	13.8	—	

The percentages are based on the live births (22,480) for the year 1933, with the addition of 482 births in City Hospitals transferred to addresses outwith Glasgow.

SECTION IV.

INFECTIOUS DISEASES.

The number of cases of the various infectious diseases registered during 1933, and the number treated in Local Authority hospitals and other institutions, are given in the Appendix Table XVII; the seasonal prevalence of each is shown in Table XIX, which gives the numbers registered during each month of the year.

For purposes of comparison, the rates for each disease per million of the population, along with the rates for the preceding four years, are given in Table XVIII of the Appendix. The rates for the principal diseases which have been notifiable over a considerable period are summarised in the following table from 1914 onwards:—

GLASGOW.—CASE-RATE PER MILLION OF THE POPULATION FOR ALL CASES OF INFECTIOUS DISEASES REGISTERED SINCE 1914.

YEAR.	Typhus Fever.	Enteric Fever.	Continued and Undefined.	Puerperal.	Smallpox.	Scarlet Fever.	Diphtheria and Membranous Group.	Cerebro-spinal Fever.	Phthisis.	Non-Pulmonary Tuberculosis.	All Other Diseases.	TOTAL.
1914,	18	340	7	206	—	5,337	1,440	45	2,284	1,088*	21,675	32,440
1915,	9	248	5	175	—	5,973	1,257	167	2,169	1,375	25,389	36,667
1916,	17	158	8	178	—	3,719	1,220	131	2,285	1,270	17,001	25,987
1917,	1	82	4	148	—	1,634	1,146	75	2,435	1,433	27,005	33,963
1918,	49	128	12	151	1	1,193	1,379	67	2,258	1,273	16,045	22,556
1919,	30	103	8	163	5	2,443	1,626	72	1,834	1,083	21,359	28,726
1920,	8	204	13	267	477	3,378	1,809	76	2,009	1,063	25,509	34,813
1921,	6	100	7	299	19	3,272	1,727	56	1,902	1,061	23,965	32,414
1922,	18	79	6	274	—	3,234	1,572	62	1,818	977	31,633	39,674
1923,	2	117	20	259	—	3,321	1,645	59	1,606	1,149	25,805	33,984
1924,	—	76	18	222	2	2,965	1,768	61	1,703	1,137	30,881	38,835
1925,	—	41	8	279	—	3,551	1,617	58	1,490	1,039	22,309	30,430
1926,†	7	92	4	283	—	4,350	2,130	60	1,646	945	31,865	41,385
1927,	—	136	4	254	—	3,777	2,785	72	1,489	1,010	32,021	41,550
1928,	—	53	4	379	—	2,971	2,414	94	1,582	1,016	29,368	37,880
1929,	—	78	4	474	20	3,079	1,944	186	1,656	911	28,838	37,192
1930,	2	129	4	549	3	4,555	2,407	136	1,549	962	32,002	42,298
1931,	1	102	3	609	—	6,449	1,937	167	1,564	897	36,642	48,671
1932,	—	69	1	649	—	8,361	1,966	138	1,572	874	25,745	39,375
1933,	—	122	2	492	—	7,593	2,148	140	1,465	720	21,572	34,254

* Non-pulmonary tuberculosis made compulsorily notifiable, July, 1914.

† Rates are for extended city.

The movements of the principal infectious diseases for a series of years are given in the foregoing table. There was a continuance of the high prevalence of scarlet fever, although the case-rate per million of the population, 7,593, is below the rate for the preceding year, namely, 8,361. Both enteric fever and diphtheria were also more prevalent, while there was a definite reduction in the number of cases of puerperal fever registered. The total case-rate for all diseases was considerably lower than it has been during the past few years, the reduction in 1933 being due to the almost entire absence of measles. The incidence of the various diseases is dealt with in more detail in the pages which follow.

DISEASES FORMERLY CALLED "PRINCIPAL ZYMOTIC DISEASES.

The death-rates for several periods have been:—

1881-1890, 3.000 per 1,000 living.	1926, 1.257 per 1,000 living.
1891-1900, 3.282 "	*1927, 1.141 "
1901-1905, 2.660 "	1928, 1.232 "
1906-1910, 2.450 "	1929, 0.874 "
1911-1915, 2.424 "	1930, 0.984 "
1916-1920, 1.607 "	1931, 1.394 "
1921-1925, 1.303 "	1932, 0.960 "
	1933, 0.758 "

* Diarrhœa over 2 years excluded.

In this comparison only those infectious diseases that have been notifiable for most of the period given are included.

SMALLPOX AND VACCINATION.

Smallpox of a very mild type continued to be prevalent in various districts in England, but in considerably diminished numbers. Glasgow, however, has remained free of the disease since 3 cases were discovered on an incoming ship in 1930.

Towards the end of March a vessel arrived from India from which a case of smallpox had been removed at Liverpool. The crew numbered 400, most of whom came on to Glasgow. As is always the case, there was quite a number of former addresses at which they could not be traced. All were kept under observation, either at home or on the vessel, and no further infection occurred.

As reported last year, returns of conscientious objectors to vaccination from Registrars have been discontinued as the

administrative work in connection with compulsory vaccination is of little value in view of the large decrease in the proportion of children successfully vaccinated. This is shown in the following summary. Under the Vaccination Acts in 1932 only 46·8 per cent. were successfully vaccinated, compared with 51·3 per cent. for the preceding year and 82·9 in 1906, the year previous to the Vaccination (Scotland) Act, 1907, which permitted the exemption of children on conscientious objection being made by parents or guardians.

TABLE SHOWING RESULTS OF PRIMARY VACCINATION OF CHILDREN BORN DURING SEVERAL YEARS.

(From the Detailed Annual Reports of the Registrar-General.)

Year.	Successfully vaccinated. Per cent.	Insusceptible of vaccine disease. Per cent.	Died before vaccination. Per cent.	Conscientious objection to vaccination. Per cent.	Vaccination postponed. Per cent.	Unaccounted for. Per cent.
1906,	82·9	0·5	10·6	0·2	0·8	5·0
*	*	*	*	*	*	*
1914,	51·7	0·9	12·1	25·1	1·8	8·4
*	*	*	*	*	*	*
1930,	53·3	2·2	8·3	29·7	1·5	5·0
1931,	51·2	3·0	8·1	31·9	1·5	4·3
1932,	46·8	4·2	8·3	34·7	1·2	4·8

During the year 4,445 cases were reported by the Registrars as not having lodged certificates under the Act, and the following is an abstract of the results of action taken by the Assistant Vaccination Officer:—

Cases vaccinated,	...	...	...	...	...	1,622
„ postponed,	...	...	...	...	...	1,607
„ insusceptible to vaccine disease,	...	...	...	...	...	195
„ died before vaccination,	...	...	...	...	...	28
„ not found,	...	...	...	...	...	853
„ written off by Department of Health,	...	...	...	...	...	140

These enquiries involve a considerable amount of visiting, and, in addition to 454 visits made by the Assistant Vaccination Officer, 3,360 others were visited by Assistant Sanitary Inspectors, a total of 3,814, or nearly 86 per cent. of the total number of cases referred to the department. Among the defaulters there were 56 conscientious objectors who had failed to claim exemption within the specified period, and 55 of these ultimately lodged successful or Conscience Certificates, while the remaining case was reported to the Health Committee and afterwards disposed of by instructions of the Department of Health.

The total number of children vaccinated at clinics held at the Child Welfare Centres in the various districts of the city was 2,813, compared with 2,933 in 1932. The following table

shows the number of children vaccinated at the various centres during the past three years:—

STATEMENT SHOWING NUMBER OF INFANTS VACCINATED AT THE CHILD WELFARE CONSULTATIONS DURING THE YEARS 1931-1933.

Centre.	1931.	1932.	1933.
Public Health Office, ...	494	731	615
Maryhill, ...	223	180	181
Govan Town Hall, ...	123	114	98
Adelphi Street, ...	343	395	313
Partick, ...	142	85	87
Weir Street, ...	146	139	134
Bridgeton, ...	609	623	602
Shettleston, ...	303	293	317
Elder Park, ...	104	95	121
Springburn, ...	39	141	152
Richard Street, ...	103	105	121
Blawarthill, ...	—	32	72
	2,629	2,933	2,813

TYPHUS FEVER.

No case of this disease occurred during the year. There have been only three cases of typhus in the city since 1927.

ENTERIC FEVER.

The number of cases notified, the number verified, and the causal organism are as follows:—

	B. Typhosus	Paratyphosus B.	Total.
Cases notified, ...	82	81	163
Cases verified, ...	27	109	136

The number of verified cases in 1933 is higher than the average (94·5) for the preceding eight years 1925-1932. This may possibly be related to the meteorological conditions which characterised the year, namely, low rainfall and high average temperatures. In Scotland, as a whole, 1933 was marked by a sharp rise in the number of cases, and rural districts appeared to be more affected than urban areas. The proportion of paratyphoid cases in Glasgow in 1933 (81 per cent.) is the highest yet recorded. In the previous eight years there was only a slight excess of paratyphoid cases, namely, 382, as compared with 372 B. typhosus cases. Paratyphoid cases have not included any "A" infections since 2 occurred in 1925.

In spite of the increased prevalence of the enteric infections in 1933, no well-marked localised epidemic has to be reported. The only notable grouping of cases occurred in connection with a children's hospital, in which 15 autumn cases of paratyphoid fever were associated with one ward and 5 with another. (Three other cases, a house physician and 2 nurses, also formed part of

one of the groups, but were not registered in Glasgow.) In the larger group the source of infection was regarded as a child who was admitted in September and was later found to have been responsible for the infection of the four remaining members of her family. In the hospital ward the infection was thought to have been transmitted to 7 other persons, of whom 4 were young patients (1 from outside Glasgow) and 3 were nurses. Of the patients, 1 gave rise to 2 cases and another to 1 case in their own homes, as they were dismissed from hospital when incubating the disease and readmitted when symptoms developed. In the smaller group of cases the earliest of the 4 secondary cases (2 Glasgow children and 2 from outside the city) did not sicken until a month after the dismissal of a child from the South-Eastern Division, who was regarded as the source of infection. Possibly an undetected contact carrier was responsible for maintaining the infection in this ward, which is situated on a different flat from that in which the larger outbreak occurred and has a separate nursing staff. The hospital staff were energetic in their investigations, which included the examination of 223 specimens in their own laboratory.

Case Mortality Rates and Death-rate.—The case mortality rates were as follows:—*B. typhosus* infections, 26 per cent., and *B. paratyphosus* infections, 2 per cent. Seven adults died of the former (males aged 18, 46, and 51, and females aged 32, 32, 33, and 36) and 2 infants of the latter (a male aged 7 months and a female aged 11 months). The death-rate per thousand living is the lowest on record in Glasgow, as shown in the following table of death-rates per thousand living since 1881:—

1881-1890, ...	0.280	1926, ...	0.121
1891-1900, ...	0.231	1927, ...	0.104
1901-1905, ...	0.134	1928, ...	0.128
1906-1910, ...	0.205	1929, ...	0.124
1911-1915, ...	0.187	1930, ...	0.133
1916-1920, ...	0.143	1931, ...	0.109
1921-1925, ...	0.123	1932, ...	0.109
		1933, ...	0.008

Seasonal Distribution according to Dates of Sickenings.—In the compilation of this table, cases sickening in December of the previous year, but not registered until the beginning of the year under review, are allotted to the December of the year under review. One case is so allotted in the following table:—

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
<i>B. typhosus</i> , ...	1	1	1	3	6	2	2	2	4	3	1	1	27
<i>B. Para-typhosus B.</i> , —	—	1	4	8	12	9	32	18	7	14	2	2	109
Totals, ...	8 (6%)			40 (30%)			65 (48%)			23 (16%)			136 (100%)
	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			

The highest quarterly incidence, it will be seen, is as usual recorded during the third quarter.

AGE AND SEX DISTRIBUTION.

	-1	-5	-10	-15	-20	-25	-35	-45	-55	-65	65+	Total.
B. Typhosus—												
Males,	—	3	1	2	1	1	1	—	4	—	—	13
Females,	—	1	1	1	2	2	3	—	3	1	—	14
Para B.—												
Males,	2	8	5	7	7	4	3	—	4	—	—	40
Females,	1	8	12	7	13	9	6	—	11	2	—	69
	3	20	19	17	23	16	13	—	22	3	—	136

It may be noted that 31 per cent. of the cases were under 10 years of age, as compared with 30 per cent. in 1932 (22 out of 74). The percentage of the population of Glasgow formed by those under 10, according to the 1931 census, was 19 (203,113 out of 1,088,461). The ratio of male cases per hundred female remains low at 64. Dealing with this subject, Dr. A. K. Chalmers (*The Health of Glasgow (1930)*) states: "In pre-war years the incidence among males on the average exceeded that among females, but the following changes in the sex ratio were observed during and after the war:—

Year.	Ratio Male Cases per 100 Females.	Year.	Ratio Male Cases per 100 Females.
1914,	... 141	1921,	... 99
1915,	... 116	1922,	... 81
1916,	... 117	1923,	... 91
1917,	... 98	1924,	... 67
1920,	... 93	1925,	... 57

Since 1925 ratios of male cases per 100 females have been recorded as follows:—

1926,	... 81	1929,	... 76
1927,	... 164	1932,	... 61
1928,	... 97		

Dr. Chalmers regarded the change in sex incidence as related to the extensive inoculation of males carried out in the army. It may be pointed out, however, that for 1933 the ratio of male cases under 35 years per 100 females under 35 years was 68, a figure identical with that for 1932 for cases under 35 years.

Number of Contacts Examined and Number Found Positive.—In the following table the term "specimens" includes Widal blood tests as well as bacteriological examinations of urine and faeces.

	B. Typhosus.	Para.B.	Total.
No. of cases verified,	27	109	136
No. of cases in connection with which no specimens from contacts were examined,	5	11	16
No. of cases in connection with which specimens from contacts were examined,	22	98	120
No. of persons regarded as contacts of the latter, ... +10	77	337	414
Do. ... do. -10	29	124	153
No. of contacts examined by means of specimens, ... +10	68	235	303
Do. ... do. -10	25	98	123
No. of contacts found positive, ...	3	35	38

} 567

} 426

It may be observed that contacts were examined in connection with 77 per cent. of the cases. As regards children under 10 years of age regarded as contacts, 80 per cent. were examined, as compared with 73 per cent. of contacts over 10 years of age.

In last year's Annual Report a survey was made of the examination of contacts in the period from September, 1922, to December, 1931, excluding October, 1923, to December, 1924. In this period for every 100 verified cases, 201 persons were examined as contacts, and for every 100 verified cases 7 positive contacts were found. Of the contacts examined, 3·6 per cent. were found positive. In 1932, for every 100 verified cases 389 contacts were examined, and for every 100 verified cases 23 contacts were found to be positive. Of the contacts examined 4·4 per cent. were found positive. In 1933, for every 100 verified cases 313 contacts were examined, and for every 100 verified cases 28 contacts were found positive. Of the contacts examined 8·9 per cent. were found positive.

MANNER OF EXAMINATION OF CONTACTS.

No. of specimens examined per contact (urine, faeces or blood),															Total Specimen
	1	2	3	4	5	6	7	8	9	13	19	22	22	22	
No. of contacts from whom above number of specimens was examined,	42	196	42	110	6	7	5	11	4	1	1	1	1	1	Total Person 426

Further details of the 1,285 specimens submitted are as follows:—

NUMBER OF SPECIMENS EXAMINED.

	Enteric.	Para. B.	Total.
Urine,	132	441	573
Fæces,	132	454	586
Blood,	9	117	126
Total,	273	1,012	1,285

The 126 specimens of blood were submitted from 108 contacts. There are 223 specimens included in the above totals which were examined outside the department's laboratory, namely, in the laboratory of the children's hospital in which the two ward outbreaks occurred as previously mentioned. In 1933 the average number of specimens examined per contact was 3·0, and of each 100 specimens 10 were specimens of blood, 45 of faeces, and 45 of urine. In 1932, when 530 specimens were examined, the average number of specimens per contact was 1·8. The 530 specimens were made up of 108 specimens of blood, 242 of faeces, and 180 of urine, that is, of every 100 specimens, 20 were specimens of blood, 46 of faeces, and 34 of urine. The figures in this and in the preceding paragraph give some indication as to how the number of contacts found positive is related to the total number examined and the perseverance with which they are examined.

Focal Concentration.—Apart from the 2 restricted outbreaks which occurred in connection with a children's hospital, the following family groups are to be noted. There were 1 group of 4 cases, 4 groups of 3 cases, and 16 of 2 cases, giving a total of 23 groups or foci comprising 68 cases. The remaining 68 cases verified during the year are all isolated or sporadic. The following table shows the focal concentration for some years past:—

ENTERIC FEVER.—GLASGOW.—SEPTEMBER, 1922, TO DECEMBER, 1933.—GROUPED AND SPORADIC CASES.

Year.	No. of Groups.	Cases in these Groups.	Sporadic Cases.	Total Cases.
1922-23,...	8	23	95	118
1925, ... *	3	6	38	44
1926, ...	5	17	83	100
1927, ...	6	85	63	148
1928, ...	5	30	27	57
1929, ...	4	11	70	81
1930, ...	11	37	103	140
1931, ...	10	62	50	112
1932, ...	13	41	33	74
1933, ...	23	68	68	136
Total, ...	88	380	630	1,010

(From October, 1923, to December, 1924, is excluded, as during this period the necessary information was not available.)

That in Enteric Fever sporadic Cases should form 62 per cent. (630 out of 1,010) of the total is a feature which is perhaps not generally appreciated.

Source of Infection.—In the following cases the source of infection was traced:—(a) A male, aged 20, contracted enteric fever while under observation in a ward containing enteric fever patients; (b) a nurse contracted enteric fever in the observation ward of a fever hospital; (c) another nurse contracted enteric fever in an enteric fever ward; (d) 2 cases were traced to a carrier in Glasgow; and (e) a patient in Glasgow was infected by her mother, who lived in Dunbartonshire. (In addition, a group of 3 cases was described as possibly having been infected by shell-fish. In 1 case running water was under suspicion, and in another case the patient's father was suspected to be the source, but this was not demonstrated.) Thus in 6 foci, comprising 6 persons, the source of infection was definitely traced.

With regard to the 23 groups, comprising 68 persons, referred to above, 45 persons can be regarded as having been traced to the first case in each group, so that in 51 cases the source of infection was discovered.

Place of Infection.—Infection was suspected to have been contracted in an Ayrshire town ('x') in a group of 4 cases; in

one or other of 2 towns ('y' or 'z') in Ayrshire in a group of 3 cases; and in town 'z' of this County in 4 separate cases. Four cases were admitted to a general hospital suffering from enteric fever contracted in 4 different towns in Lanarkshire. One case came into a children's hospital with *B. typhosus* infection from Dunbartonshire. In addition, 2 separate cases were suspected to have contracted the infection in Ayrshire, and the following places were regarded as each being responsible for 1 case:—Ireland, Skye, Sutherland, Arran, and Renfrewshire. Thus in 17 per cent. (23 out of 136) the infection was contracted outside Glasgow. These 23 cases represent 18 of the total 91 foci of infection.

Institutional Cases.—For the purpose of this report, an institutional case is defined as any person contracting enteric fever in a hospital or a case admitted with enteric fever from beyond the boundary to a general hospital in Glasgow. If there is no evidence to the contrary, a case which sickens 14 or more days after admission to hospital is classed as an institutional case. Eight institutional cases have been described in the immediately preceding two sections, namely, the first 3 cases described in the paragraph "Source of Infection," the 4 general hospital cases and the hospital case described in the last paragraph. There were 12 other institutional cases, namely, a sister in charge of all the patients of a cottage hospital, 3 cases from beyond the boundary, 5 Glasgow children, and 3 nurses involved in the children's hospital outbreak. Thus 20 cases (14·7 per cent.) were classed as institutional, but in only 15 of these was the infection actually contracted in a Glasgow institution.

Contacts found Positive.—Contacts found positive comprise those persons from whom positive specimens are obtained in the course of routine supervision of contacts by the department's staff following on the notification of a case. The term does not include, for example, secondary cases notified independently of routine departmental supervision of the household. It should, therefore, be clear that the number of contacts found positive does not exhaust the number of associated cases in those instances where multiple infections or grouping of cases occurred. During 1933, 38 contacts were found positive. These were classified as follows:—

	Contacts found positive on first examination of specimens.	Contacts found positive on second examination of specimens.	Total.
Secondary Cases, ...	22	2	24
Missed Primary Cases, ...	4	1	5
Contact Carriers, ...	5	3	8
Chronic Carriers, ...	1 (Cen. Div.)	—	1
	32	6	38

The categories of positive contacts for the years in which information is available are shown below:—

		Sept. 1922—Dec. 1931 excluding Oct. 1923 to Dec. 1924	1932	1933
		Total = 58.	Total = 17.	Total = 38.
		Percentage.	Percentage.	Percentage.
Secondary Cases, ...	...	33	53	63
Missed Primary Cases, ...	...	26	6	13
Contact Carriers, ...	...	17	29	21
Chronic Carriers, ...	...	24	12	3

The low percentage of secondary cases in the long period survey may be due to the fact that many positive contacts who were afterwards registered as cases were omitted, even although they may have been discovered in the course of routine investigation.

Positive Contacts Classified as Secondary Cases. — Positive contacts classified as secondary cases are persons who contracted the infection after the occurrence of a previous case in the same focus, and who were first recognised as suffering from the disease as a result of laboratory examinations. Secondary cases notified independently of the department's investigations are not included as positive contacts. Among positive contacts classified as secondary cases are included contacts found positive who, although they may have sickened before the case to whom the contacts are referable, are nevertheless not the first case in the group. This year's secondary cases included 12 (9 and 3 respectively) of the cases in the two hospital ward outbreaks. Of the secondary cases 11 were under 10 years of age. With respect to the 2 secondary cases found positive on second examination of specimens, 1 was a girl of 6 years (*B. typhosus* infection), who sickened before any specimens were obtained. In the other case, a boy suffering from paratyphosus *B.* infection, the date of sickening is uncertain.

Positive Contacts Classified as Missed Primary Cases.—The term "missed primary cases" is used for positive contacts who not only give a history of an illness, usually of an indefinite illness, of which the date of sickening is antecedent to that of the case to whom the positive contacts are referable, but who are considered to be responsible for the focus or group. Where two or more positive contacts are found whose dates of sickening are antecedent to the date of sickening of the case to whom the positive contacts are attributed, only one of the positive contacts is classified as the missed primary case; the others being

treated as secondary cases. The particulars regarding the 5 missed primary cases are as follows:—

Sex.	Age.	Organism.	Number of Cases caused by Missed Primary Case.	Examinations leading to Detection of Missed Primary Case.		
				Urine.	Fæces.	Blood.
M.	16	B	1			Pos.
F.	50	B	1	Pos.	Pos.	
F.	53	T	1			Pos.
F.	22	B	1		Pos.	
*F.	40	B	1	{ Neg. Neg.	Neg. Pos.	

* This one became a chronic carrier.

Positive Contacts Classified as Contact Carriers.—Contact carriers are those contacts who yield positive laboratory specimens for a short period, but give no history of recent symptoms suggestive of enteric fever. In the discussion above regarding sources of infection, such contact carriers are not classified as sources of infection for the purposes of this report, although, doubtless, they play a part in the spread of infection. The following table gives details regarding 8 contact carriers discovered during 1933. The 5 who were sent to hospital were registered as cases.

Sex.	Age.	Organism.	No. of Infected Persons constituting the Group of which Contact Carrier was a Member.	Was the Source of the Group discovered?	Examinations leading to Detection of Contact Carrier.			Days in Hospital or Day between First and Last Positive Specimens.
					U.	F.	Bl.	
F.	8	Para. B.	2	No.	Neg.	Pos.		1 positive specimen on
F.	2	Para. B.	2	No.	Neg.	Pos.		In hosp. 32 days.
M.	2	Para. B.	2	No.	Neg.	Neg.		In hosp. 35 days.
					Neg.	Pos.		
F.	41	Para. B.	2	No.	Pos.	Pos.	Pos.	35 days.
				" Probably " Girvan				
F.	18	Para. B.	3	No.	Neg.	Pos.		In hosp. 22 days.
F.	16	Para. B.	3	No.	Pos.	Neg.		In hosp. 22 days.
F.	37	Para. B.	4	No.	Neg.	Neg.		1 positive specimen on
				" Saltcoats "	Pos.	Neg.		
M.	6	B.T.	2	No.	Neg.	Neg.		In hosp. 62 days.
					Pos.	Neg.		

The most important features of the above statement are probably the comparatively young age-distribution of the contact carriers (4 were under 10 years and 2 between 10 and 20 years), and that, with one exception, the organism concerned is *B. paratyphosus B.* The Widal reaction was examined in 5 of the contact carriers, of whom 4 gave a positive result. With regard to the 3 cases who were not sent to hospital, the first was cleared

from further supervision after 1 further negative urine and 1 further negative stool had been obtained, the second after 4 further negative specimens of each had been obtained, and the third after 2 further negative specimens of each had been obtained.

Chronic Carriers.—The following table gives information about the known chronic carriers in Glasgow (excluding those in Hawkhead Mental Hospital), who are now regarded as numbering 11. Four of these were detected during 1933—a female, aged 32, is the positive contact classified as a chronic carrier. The column of cases attributed to be carriers does not include those cases (if any) caused by the carriers at the time of sickening of the original enteric illness. It only includes those cases caused by the carriers at or since their detection as carriers:—

Division.	Sex.	Age at Dec. 1933.	Organism.	Urinary or Intestinal Excreta.	Date of Onset of Original Illness.	Date of Detection as Carrier.	No. of Cases traced to Carrier at or since Detection.
C.	M.	27	B.T.	Int.	1928	1928	None.
N.	F.	80	B.T.	Int.	?	1929	None.
E.	M.	44	B.T.	Int.	1909	1930	1 at detection
N.	M.	41	Para B.	Int.	July, 1930	1930	None
N.	F.	60	B.T.	Int. & Ur.	?	1931	1 at detection
S.W.	F.	58	Para. B.	Int.	27/12/31	1932	None
C.	F.	72	Para. B.	Ur.	1882	19/4/32	1 at detection
N.	F.	57	B.T.	Int. & Ur.	1901	Aug., 1932	1 at detection
C.	F.	32	B.T.	Int.	26/8/32	12/1/33	1 at detection
C.	F.	36	Para. B.	Ur.	1926	11/3/33	None
C.	F.	40	Para. B.	Int. & Ur.	Aug., 1933	1933	None
E.	F.	42	Para. B.	Int.	4/10/33	1933	None

Notes.—(1) Carrier No. 2 suffered in 1929 from an obscure illness in the course of investigation of which *B. typhosus* was recovered from the faeces.

(2) Carrier No. 10 was discovered in the course of investigation following notification as a case of tuberculous nephritis.

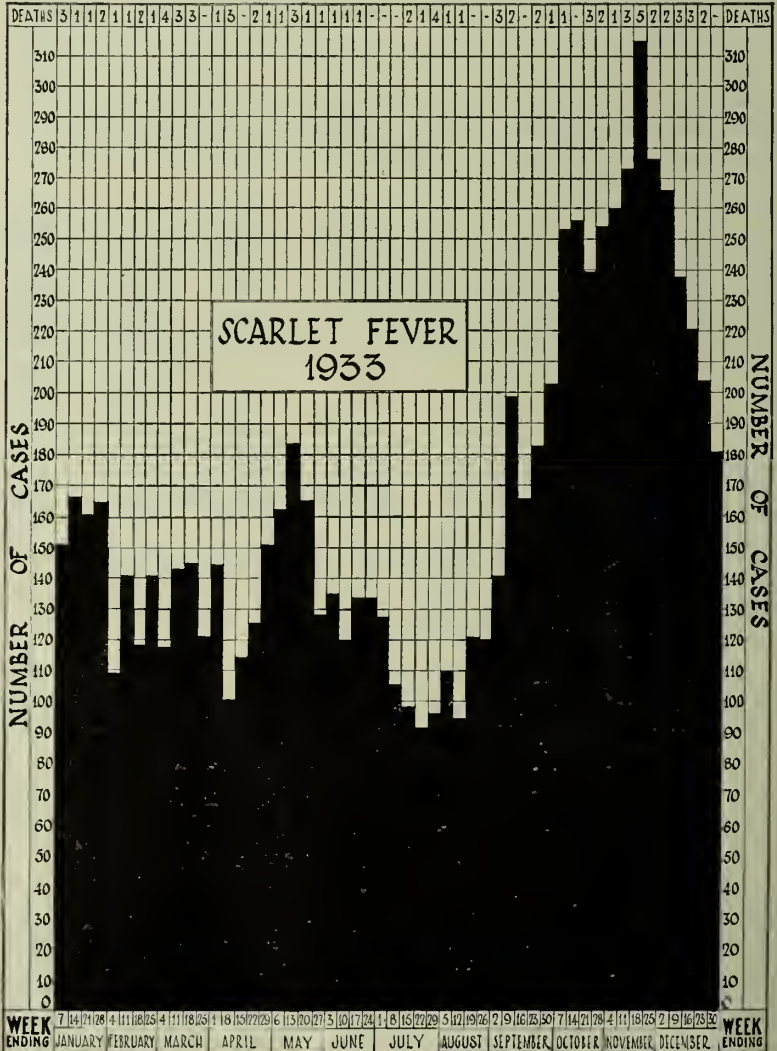
(3) Positive specimens of all the positive excretions listed have been obtained from all the above carriers since the end of 1932, excepting No. 7 (from whom no specimens have been submitted during that period) and No. 4. The latter last yielded a positive specimen of faeces in December, 1931. He was not examined during 1932, and in June, 1933, one specimen of urine and one of faeces gave a negative result.

(4) No records are available at present of the blood reactions of these carriers.

The statement on chronic carriers reveals three points of interest:—(a) No case was directly traced to any carrier after the carrier condition was recognised; (b) the excess of females over males (9 to 3); and (c) the age-distribution. As regards the last, it may be observed that 5 are over 50 years, 4 between 40 and 50 years, while the youngest is 27 years, this being in decided contrast to the comparatively young age-distribution of the contact carriers.

Enteric Carriers in Hawkhead Mental Hospital.—There were 15 enteric fever carriers in Hawkhead Mental Hospital at the end of 1933, and 41 patients with a positive Widal who have not demonstrated to be carriers.

The data on which this report is based have entailed a considerable amount of extra work by the other Divisional Medical Officers and their clerks, to whom acknowledgment is made.



SCARLET FEVER.

The incidence of scarlet fever throughout 1933 continued to be very high, although the total number of cases registered, namely, 8,378, was less than that registered during the preceding year, when the total reached 9,158 cases. The diagram showing the weekly incidence of cases illustrates the trend of the epidemic, which differed considerably from that of 1932, when there was an exceptionally heavy incidence during the first half of the year followed by a normal autumnal rise. During the year under review the spring and early summer incidence, although high, was very much less than that of the preceding year, but the usual summer lull was immediately followed by a steady and almost abnormal autumnal epidemic. The lulls indicated at the end of March, and again at the end of June, are probably due to the closure of schools for Easter and summer holidays, and the opening of schools again at the end of August supplied the necessary impetus for the development of the autumn epidemic.

SHOWING INCIDENCE OF SCARLET FEVER IN AGE-GROUPS.

	Home.		Hospital.		Total.
	M.	F.	M.	F.	
- 1 year, ...	7	8	20	14	49
- 2 years, ...	22	15	146	115	298
- 5 ,, ...	182	153	802	839	1,976
-10 ,, ...	397	431	1,187	1,459	3,474
-15 ,, ...	163	203	459	602	1,427
-20 ,, ...	39	40	148	210	437
-25 ,, ...	28	35	65	125	253
-35 ,, ...	20	41	88	135	284
-45 ,, ...	16	19	25	65	125
-55 ,, ...	4	10	10	21	45
-65 ,, ...	1	1	2	5	9
+65 ,, ...	—	—	—	1	1
	879	956	2,952	3,591	8,378

It will be seen from the table that the great majority of cases occurred between the ages of 5 and 15, which is the school age, but no unusual local epidemics can be reported in any particular schools of the city. The spread was general, and this also applies to the age-groups below and above the school age. The course of the disease throughout the year did not appear to be influenced by any known local or meteorological conditions, although it is well known that 1933 was exceptionally dry and notable for its unusually prolonged warm weather.

Of the deaths, 70 occurred among the hospital cases. Although the total number of cases was very high, only 83 deaths occurred, or 1 per cent., compared with 1·1 per cent. during the previous year, and reports from all quarters, particularly the fever hospitals, indicated throughout the year that the disease was of a mild type, but very infectious.

The peak of incidence was reached during the second week of November when 314 notifications were received. The diagram shows a normal termination to the epidemic after this record week, and the diminution in the number of cases continued steadily until the end of the year. It is hoped that the very high incidence of scarlet fever during 1932 and 1933 is the precursor of a more normal behaviour of this disease in the City.

Hospital Cases.—During the year 6,543 cases, or 78 per cent., were treated in hospital, and 1,835, or 22 per cent., at home. The pressure on hospital accommodation was very great during the whole year, and as many cases as possible were nursed at home. The duration of residence of each patient in hospital was curtailed as far as was possible.

During November 900 beds or more were allocated to scarlet fever, and towards the end of November there were 450 cases being treated at home, figures which indicate the volume of scarlet fever being dealt with at the height of the epidemic.

DAY'S RESIDENCE OF SCARLET FEVER (GLASGOW CASES ONLY)
DISMISSED DURING 1933.

Hospital.		—28 Days.	—35 Days.	—42 Days.	+42 Days.	Total Cases.
		Dismissals.	Dismissals.	Dismissals.	Dismissals.	Dismissals.
Belvidere,	...	453	1,155	430	665	2,703
Ruchill,	...	1,024	567	241	545	2,377
Shieldhall,	...	186	148	56	109	499
Knightswood,	...	75	174	195	345	789
Total Cases,		1,738	2,044	922	1,664	6,368

This table shows that the great majority of the cases were kept in hospital less than 5 weeks, and a considerable number of these, namely, 1,738, for less than 4 weeks. A daily waiting list of cases existed during the whole year, and this reached its highest point in November when it extended to 41 cases.

Secondary Cases.—In association with the 6,543 cases sent to hospital there were 702 secondary cases, or 10·7 per cent. This figure is almost the same as that recorded last year, i.e., 10·8 per cent. Again, it did not appear that delay in removal to hospital materially affected the incidence of secondary cases in the

households concerned. *Home Cases.*—Altogether, 1,835 cases were treated at home, the secondary cases arising from these being 12·3 per cent., compared with 11·8 per cent. last year. It would seem, therefore, that hospitalisation of cases does not do much to prevent secondary cases in houses where the infection has appeared. While the broad figures appear to bear this conclusion, there are several obvious qualifications. In fact, the precise relationship of the hospital to the incidence of scarlet fever is difficult to determine accurately with the information available. The opportunity has been taken to collect additional facts throughout the epidemic year 1932-33, which will be made the subject of special study.

Hospital Return Cases.—There were 303 “return” cases associated with the 6,368 Glasgow cases dismissed from hospital during the year, or 4·75 per cent. “return” cases. Last year there were 4·8 per cent. “return” cases.

STREPTOCOCCAL INFECTIONS IN A MATERNITY NURSING HOME.

A series of streptococcal infections occurred in a nursing home in which the work carried out is of a somewhat varied nature :—(a) the chief function is the admission of maternity cases, usually three or four, and, in addition, one or two medical cases ; (b) short courses of training in nursery duties are afforded to girls who may vary in number up to four at a time ; (c) from three to five infants are kept ; and (d) nurses may be sent out from the home to undertake outside cases. The accommodation for the staff and nursery pupils which was mostly situated in a basement flat was considerably overcrowded.

The course of events in chronological order was as follows :—(1) *9th April.* A nurse on the staff, N.G., sickened of scarlet fever and was removed to hospital the same day. (2) *17th April.* A male infant, 5½ months, developed surgical scarlet fever and was removed from the home on the following day. He had been vaccinated on 10th April and the insertion rapidly became septic. (3) *18th April.* A male infant, 7½ months, became febrile. No definite cause was found. As the fever continued he was admitted on 20th April to hospital, where bronchitis and otitis media was diagnosed. (4) *24th April.* A nurse sickened of severe tonsillitis. Hæmolytic streptococci were recovered from the throat on 25th April. This nurse had taken up temporary duty in the home on 21st April. She was transferred to the Reception House on 25th April. (5) *30th April.* A maternity patient sickened of scarlet fever and was removed to hospital the following day. She had been admitted to the home on 17th April and confined the same day.

On 1st and 2nd May, the nine members of the staff, the two members of the matron's family, and the only other patient (a medical case) were swabbed for hæmolytic streptococci. All were reported negative, except the medical patient who left the home on 5th May.

The home was closed to maternity cases from 1st to 5th May, 1933.

(6) *18th May.* A nursery pupil developed scarlet fever and left the home on the following day. She had returned to the home on 15th May after a week's holiday. (7) *21st May.*—A maternity patient developed a streptococcal rash and was removed to her own home three days later. She had been admitted to the nursing home on 19th May and confined the same day.

The home was closed to maternity cases from 25th May to 1st June.

Nurse N.G., who had sickened of scarlet fever on 9th April, returned to the home on 5th June. No infectious discharges were found, and the fauces presented normal appearances. A swab taken on 5th June was reported positive for hæmolytic streptococci on 8th June, and on the same day this nurse left the home.

(8) *11th June.* A pupil nurse sickened of tonsillitis and left the home. (Swab negative for hæmolytic streptococci, 11th June). She had started training on 15th May, but on 21st May had left the home complaining of a cold. There was no evidence that this illness was of a streptococcal nature and she had only returned to the home on 5th June. (Swab negative for hæmolytic streptococci, 7th June). (9) *12th June.* A maternity patient developed puerperal sepsis and was removed to hospital two days later. She had been admitted to the home on 10th June and confined on the same day. (10) *12th June.* A pupil nurse sickened of scarlet fever and was removed to hospital on the following day. She had commenced training on 29th May.

All maternity engagements were cancelled until the beginning of August.

The staff and inmates were inspected on numerous occasions for evidence of missed attacks of scarlet fever, and repeated throat swabs, totalling 73, were examined for hæmolytic streptococci. In all, positive results from five persons were obtained. Of these, three have already been mentioned, and the other two were:—(a) A nurse in charge of the nursery, who yielded positive cultures on 10th and 18th April. She left the home on 18th April to have tonsillectomy performed. (b) A pupil nurse who was found positive on 18th and 27th April. On 5th May she was transferred to the Reception House from which, after three consecutive negative cultures were obtained, she was allowed to return on 29th May to the nursing home.

On 19th May, in view of the obvious overcrowding, the matron was officially informed as to the maximum number of cases, nurses, pupils and babies to be accommodated. On 30th and 31st May, the drainage and plumbing system of the property in which the home is situated was tested and numerous defects were found which were promptly remedied. It is not considered, however, that the drainage defects had any causal relationship with the series of streptococcal infections. After the occurrence of each case, thorough spraying, spring cleaning and perfumation of the infected premises and disinfection and washing of all infected articles were rigorously carried out.

The infection appears to have persisted for the most part among the staff, and it is an interesting feature that, of the members of the staff to succumb to the disease, two were recent recruits, and the remaining two sickened within a few days of resuming duty in the home after a period of absence. The last three cases were presumably infected by the nurse, N.G., during the three days, 5th-8th June, that she spent in the home eight weeks after she had sickened of scarlet fever.

The overcrowded and unsatisfactory nature of the staff accommodation was considered to be the important feature in the maintenance of the infection.

The death-rate from this disease since 1881 is shown in the following table:—

1881-1890, ...	0.490 per 1,000	1926, ...	...	0.083 per 1,000
1891-1900, ...	0.295 "	1927, ...	...	0.040 "
1901-1910, ...	0.116 "	1928, ...	...	0.031 "
1911-1915, ...	0.163 "	1929, ...	...	0.037 "
1916-1920, ...	0.060 "	1930, ...	...	0.038 "
1921-1925, ...	0.065 "	1931, ...	...	0.068 "
		1932, ...	...	0.093 "
		1933, ...	...	0.075 "

DIPHtheria.

Diphtheria was more prevalent in 1933 than in the two preceding years. The number of cases registered was 2,370, compared with 2,153 in 1932. The case-rate per million of the

population is equivalent to 2,148, and continues a series of rather high, though fluctuating, rates which have obtained during the past eight years. The rates previous to 1926 remained uniformly low since pre-war days. The death-rate, however, has remained low at around 12 per hundred thousand of the population during the past 10 or 12 years, which would seem to indicate that more clinical cases have been brought to notice. On the other hand, the higher prevalence during recent years may be associated with a less toxic type of infecting organism.

The City wards most heavily affected were Ruchill and Knightswood, both districts with large rehousing schemes, where there is a considerable proportion of children of susceptible age. Despite the pressure on hospital accommodation for treatment of cases of scarlet fever, beds have always been made available for all cases of diphtheria requiring admission, so that only 45 patients were treated at home, most of them in good residential districts where houses are of larger size and suitable isolation can be arranged.

Immunization in Glasgow has been limited to very special instances, such as small institutions where continued cases have occurred, but no instances of this kind occurred during 1933.

Schools are a frequent source of spread of infection, of which the following is an example:—

Concentration of Diphtheria Cases and Carriers in a Class.—An unusually high concentration (17·3 per cent.) of diphtheria cases and carriers was found in October in a class of an average age of seven years in an annexe of a school on the outskirts of the City. It was considered that the state of ventilation of the classroom which was for various reasons unsatisfactory and the unsuitability in certain respects of the premises used as an annexe had to do with this high attack-rate. There had been during 1933 an increased incidence of diphtheria in the Ward wherein this school is situated. From January to July, 1933, there had been five cases in the school (the total roll is about 700); but between September and November nine cases were notified, as many as had occurred during the entire year of 1932. Three of these cases occurred in one family and, of the remaining six, four occurred in one class. When the pupils of this class, including the absentees, were swabbed, one missed mild case and four temporary carriers of virulent bacilli were discovered. (One of these carriers was also a home contact of diphtheria in a pre-scholar.) Thus a class of 52 was found to contain nine infected pupils—five clinical cases (including one missed case) and four temporary carriers.

Of the total cases of diphtheria, 950 occurred between 5 and 10 years of age, or over 40 per cent., and 544 between 10 and 15 years, equivalent to 23 per cent. Most of the remaining cases were under school age. The seasonal prevalence is given in Table XIX in the Appendix, which shows that the maximum was in November and the minimum was in the spring, apart from July, which is a holiday month. The case-rate compared with the previous years is given in Appendix Table XVIII.

There were 89 deaths from the disease, which is equivalent to a rate of 81 per million of the population, compared with 119 for the preceding year and a rate of 109. The highest death-rate occurred in Whiteinch with 219 per million, followed by Kingston with 172 and Woodside with 156. The case-mortality was 3·8, compared with 5·5 in 1932.

The following table shows the death-rates per thousand of the population since 1881:—

1881-1890,	0·280 per 1,000 living.	1926,	... 0·121 per 1,000 living.
1891-1900,	0·231 "	1927,	... 0·104 "
1901-1905,	0·134 "	1928,	... 0·128 "
1906-1910,	0·205 "	1929,	... 0·124 "
1911-1915,	0·187 "	1930,	... 0·133 "
1916-1920,	0·143 "	1931,	... 0·109 "
1921-1925,	0·123 "	1932,	... 0·109 "
		1933,	... 0·081 "

ERYSIPELAS.

Erysipelas was more prevalent, 1,117 cases being registered, compared with 1,045 in 1932. Probably not all the cases are notified, and only the more serious infections are removed to hospital, of which there were 663, while 10 others were dealt with in other institutions. The maximum seasonal incidence is usually during cold weather, although there is considerable variation. In 1933 the maximum occurred in November, whereas in 1932 it was in March. The incidence increases with increasing age, and so also does the mortality, although there were 13 deaths under one year and only 41 cases of that age notified.

The deaths numbered 63, which is equivalent to a mortality of 5·6 per cent., compared with 5·7 for the previous year.

DISEASES OF THE CENTRAL NERVOUS SYSTEM.

Cerebro-Spinal Fever.—There were 154 cases of cerebro-spinal fever registered in 1933, compared with 151 in 1932. The disease has been more prevalent during the past four years than has been the case since the outbreak of 1915-16. The incidence of cerebro-spinal fever was general throughout the city with no exceptional prevalence in any district. The highest number recorded was in Govan with 13 cases, while 9 were registered in the contiguous ward of Fairfield and a similar number in Gorbals. The seasonal prevalence was greatest in the early months of the year as usual. The deaths numbered 78, which is equal to 51 per cent. of the registered cases, compared with 84 deaths for the preceding year and a fatality percentage of 56.

Encephalitis Lethargica.—Cases of encephalitis lethargica registered numbered 13, compared with 11 during the preceding year. Only 2 of the cases were admitted to fever hospitals,

although 5 others were dealt with in other institutions. There were 4 cases in Kinning Park and 2 in each of two other wards, but the diagnosis of these cases is mostly doubtful.

Acute Polio-Encephalitis.—During 1933 6 cases of this disease were registered.

Acute Poliomyelitis.—Cases of this disease registered in 1933 numbered 34, compared with 4 in the preceding year. Eighteen of these were removed to fever hospitals and 11 treated in other institutions. There is no special grouping of the disease, although most of the cases occurred on the south side of the river, while there were 7 in institutions.

POST-ENCEPHALITIS LETHARGICA.

The total number of cases of post-encephalitis lethargica in the City is now 362, of whom 211 are males and 151 females. These cases represent mostly the survivors of the cases of acute encephalitis lethargica notified between 1918 and 1926, which numbered approximately 900. Chronic cases not notified at the time of the acute illness, probably because of its mildness or lack of definition, come to light each year, and 23 of these were notified during 1933. These balanced the 25 deaths which occurred during the year. Only one acute case was notified and verified. The age distribution of the cases is now as follows:—

			Males.	Females.	Total.
—15 years,	...	...	11	9	20
—20	„	...	36	17	53
—30	„	...	91	63	154
—40	„	...	32	34	66
+40	„	...	41	28	69
			211	151	362

Physical Condition.—The following table summarises the physical condition of all known cases at the end of 1933:—

			Males.	Females.	Total.
Fit for school,	...	...	8	4	12
Unfit for school,	...	...	1	2	3
Fit for housework,	...	...	—	34	34
Fit for outside employment,	...	...	58	14	72
Unfit but going about,	...	...	69	42	111
Bedridden at home,	...	...	17	10	27
Cases in hospital,	...	...	46	34	80
Cases in mental hospitals,	...	...	12	11	23
			211	151	362

Economic Circumstances of Patients.—At the end of 1933 an inquiry was made into the economic circumstances of 333 known cases, when it was found that 73 males and 45 females were very comfortable, 79 males and 62 females fairly comfortable, and 45 males and 29 females were living under poor circumstances.

Hospital Cases.—Two wards in Stobhill Hospital are utilised for male and female cases of encephalitis lethargica. The accommodation provides for 35 males and 34 females, some of whom have been in this hospital since 1924. All the homes of the patients in hospital were visited towards the end of 1933 with a view to obtaining the dismissal of some of these very chronic cases, but it was found that there was very little hope of any of them being taken home by their relatives. The turnover of beds is therefore slow, and it was only possible to admit 13 males and 6 females during 1933. It has been found that it is much better to have post-encephalitis treated in their homes where possible rather than admit them to hospital, from which it is extremely difficult to dismiss them.

During 1933 Dr. Ashie Main of the Education Health Service again examined the survivors of the 70 cases who first came under her observation in 1923. Two of the 6 cases which she reported as having recovered completely now show a certain degree of nervous instability, and one other case died. Only 39 of this group are alive. There is no evidence that the post-encephalitic tends to improve with advancing years.

MEASLES.

Probably the most outstanding feature of the year 1933 was the almost entire absence of measles. The number of cases registered, 944, was the lowest on record and is equivalent to a rate of 856 per million of the population. Since the beginning of the present century the nearest approach to this rate was 2,831 in 1921, while the average annual rate is about 10,000. As the disease is not compulsorily notifiable the great bulk of the cases are brought to notice by voluntary notification and from intimations by school attendance officers, methods which have been in operation since pre-war days. The absence of the disease is explained by the delay in the appearance of measles in epidemic form. This is unusual in Glasgow as the biennial upward trend of the epidemic period generally begins in the autumn and continues until the spring. The absence of the disease in the latter part of 1933 has, however, been followed by a major prevalence in the spring of 1934, which will be dealt with in the Report for next year. The delay in the occurrence

of measles in a large industrial centre in this latitude is of more than passing interest in view of the heavy mortality caused by measles and its complications during winter.

The case-rate per million since 1929 is given in Appendix Table XVIII and the seasonal incidence in Table XIX.

Of the total cases of measles registered two-thirds occurred between the ages of 5 and 10 years, while most of the remaining cases were under 5 years. Only 19 were admitted to fever hospitals, while 3 were treated in other institutions. Deaths numbered 4, so that the case-mortality was 0.4 per cent.

German Measles.—This disease was considerably more prevalent than in recent years, 1,831 cases being registered, compared with 681 during the preceding year. It extended over the winter of 1932-33 and most of the cases occurred in the early months as the prevalence was drawing to a close. This comparatively high incidence of German measles is interesting in view of the continued heavy incidence of scarlet fever, with which it is often confused.

WHOOPING-COUGH.

Whooping-cough maintained a relatively high incidence in 1933 especially during the first six months when over 90 per cent. of the cases were recorded, due to the late development of the winter prevalence of 1932-33. The number of cases occurring in the latter half of 1932 was approximately 3,000, while over 5,000 were registered in the first half of 1933, so that the epidemic, though fairly heavy, cannot be classed as one of the major outbreaks of the disease.

There were 6,441 cases in 1933, compared with 4,666 in 1932, the case-rates per million being respectively 6,178 and 6,517, as given in Appendix Table XVIII.

The age distribution is somewhat similar to that of measles with a tendency to be heavier at younger ages, and although the mortality is higher than measles in relation to the cases registered the average death-rate per million of the population is only about two-thirds that from measles. This is the case at least during post-war years when voluntary notification of both diseases has been more complete. The changing age constitution of the population and the smaller number of children owing to the fall in the birth-rate are probably not without

influence, as delay in the occurrence of outbreaks of the disease must tend to a higher average age of attack by reason of the fact that immunity has not been acquired at earlier ages.

Of the total cases of whooping-cough registered in 1933, less than half (44 per cent.) were between 5 and 10 years of age and 55 per cent. below 5, while most of the remaining cases were between 10 and 15.

The fatality of whooping-cough at younger ages is strikingly brought out in the following statement of percentages of cases and deaths:—

	Cases.	Deaths.
—5 years	55%	99%
+5 years,	45%	1%

The greatest number of deaths was in the first year of life.

The highest incidence of the disease occurred in the south-eastern district of the City where the greatest number of cases was registered in Gorbals, 349, but the incidence otherwise was fairly heavy throughout the City generally, the disease having by the beginning of the year spread to most of the wards.

CHICKENPOX.

Chickenpox was made a notifiable disease in 1927 because of the prevalence of smallpox in England. Compulsory notification ceased at the end of 1932 and it may be that the practice of reporting cases voluntarily has been stimulated since then for 6,817 cases were registered in 1933, compared with 7,138 in the preceding year. The average number of cases registered during the years immediately preceding that was about 7,000. The disease would appear to maintain a fairly steady incidence from year to year, rising during the winter and falling to a minimum in the summer. The maintenance of the number of cases registered is probably largely due to the fact that most of the cases occurred at the earlier school ages, 5 to 10 years, for in 1933 over 66 per cent. of the total cases were in this age-group and most of the remainder between 1 and 5 years.

The disease, as is usually the case, was prevalent more or less in all wards throughout the city, the greatest number occurring in wards with large populations of children, such as Gorbals, Hutchesontown, Whiteinch, Kinning Park, &c. Of the total 201 were removed to fever hospitals and 49 were treated in other institutions.

Chickenpox Epidemic in Nitshill Village.—During the autumn of 1933 (September to November), the rather uncommon opportunity was presented of observing the behaviour of chickenpox in epidemic form in a comparatively isolated community.

The village of Nitshill (of approximately 220 houses and 1,250 inhabitants) though within the City boundary is situated three miles from the nearest suburbs. The following number of cases of chickenpox have been registered from the village during recent years—1927, 13; 1928, nil; 1929, 4; 1930, 13; 1931, 8; 1932, 2; and 1933, 26. The 1933 cases thus constituted over two per cent. of the population and all were registered between 9th September and 12th November. Fifty per cent. of the cases were aged between six and eight years. None of the cases was over 12 years of age and they were strikingly concentrated, first in one, then in the other, of the two village schools. School A is a transferred school with a roll of 116; including 11 from beyond the boundary. Seventeen pupils, 13·8 per cent. of the roll, were infected. School B has a roll of 169, including 23 from beyond the boundary. In this school 12 pupils, or 7·1 per cent., developed chickenpox. Twenty-two of the oldest pupils from school A attended school B for special instruction, but this was discontinued for one month after the first visit to the school on 6th October. During the first part of the epidemic the cases were concentrated in school A. Between 30th August and 9th October 19 cases sickened. Of these 16 were school A pupils; two (aged five weeks and four months respectively) were home contacts of school A cases; and one (aged two years) was a home contact of uninfected school A pupils. The first two cases, scholars in the infant department, were missed cases and were not registered. In the family of one of the missed cases there were later three other cases. There were six family groups—one of four; one of three; and four of two cases. Between 11th October and 12th November nine cases sickened, and eight of these were school B pupils. There were also four school B cases during this period from beyond the boundary. There were no family groups among the school B cases. Only one school A case, who sickened on 15th October, occurred during this second phase of the epidemic. During the school B phase of the epidemic also a girl at this school sickened of right lumbar herpes zoster. She had definitely suffered from chickenpox 18 months previously along with two elder brothers. The only other two children in the house, a sister aged 5 years and an infant, did not, however, contract chickenpox during the epidemic.

OTHER INFECTIOUS DISEASES.

A record of the other infectious diseases dealt with, together with the number of each treated in hospital, is given in Appendix Table XVII. Among these is included ophthalmia neonatorum, and various forms of pneumonia, which are dealt with in other sections of the Report. There remain certain other diseases which are here briefly referred to.

ANTHRAX.

There was no case of anthrax reported during the year and no reports were received of anthrax affecting animals.

During the year 33 samples of goatskin thongs for binding orange boxes were examined by the Bacteriologist and in 5 instances positive results were obtained. These findings were reported to the Department of Health for Scotland. Salted hogs hides, bones, and hair were also submitted for examination, but with negative results.

DIARRHŒA AND ENTERITIS.

These digestive diseases which had been an annual scourge until prior to the war have largely disappeared. The death-rate at that time averaged between 50 and 60 per 100,000 of the population and has of recent years remained around 30-40 among children under two years of age when practically all the deaths occur. In 1933 the rate was 31.

During pre-war years these digestive disturbances were largely associated with contaminated food, especially with milk.

AGE IN YEARS.

			-1	-5	5+	Total.
1929,	...	...	243	57	56	356
1930,	...	...	245	57	53	355
1931,	...	...	279	38	42	359
1932,	...	...	395	38	47	480
1933,	...	...	310	51	52	413

The table which follows shows the mortality in each month of the year, and indicates that children are more vulnerable during the autumn months:—

DIARRHŒA AND ENTERITIS.

Month of Death.	Number of Deaths —1 Year.	Mean Temp.	Month of Death.	Number of Deaths —1 Year.	Mean Temp.
Jan., ...	21	35	July, ...	11	63
Feb., ...	13	39	Aug., ...	28	60
March, ...	26	44	Sept., ...	45	57
April, ...	20	48	Oct., ...	65	48
May, ...	18	52	Nov., ...	27	40
June, ...	17	60	Dec., ...	19	37

RABIES.

No case of rabies is known to have occurred, but a number of persons bitten by dogs were reported by the police for inquiry. These are shown in relation to the season of occurrence and the severity of the bite:—

				Slight.	Serious.
1st Quarter,	...	...	...	40	3
2nd Quarter,	...	...	...	107	3
3rd Quarter, ...	...	...	...	94	7
4th Quarter, ...	...	...	...	72	4
				313	17
				330	
1932,	...	247	1931,	...	320

In addition to the above, 3 persons were bitten by horses, and 1 bitten by a cat.

TRACHOMA.

The number of cases of definite trachoma on the register at the end of 1933 was 129, a further 14 cases being considered as doubtful. The number of notifications received during the year was 20, of which 8 were definite cases, 9 were doubtful, and 3 were not trachoma. During the year 23 cases were removed from the register for the following reasons:—Not suffering from trachoma, 5; considered cured, 8; left the district, 7; no information, 1; and died, 2.

Of the 129 cases on the register, 37·2 per cent. were under 25 years of age, 50·4 per cent. were 25 to 49 years, and 12·4 per cent. were over 50 years. There were 78 female patients, compared with 51 males, so that the infection in Glasgow appears to be more common in the former sex. As regards the ages of these patients at which the disease was contracted, 59·7 per cent. were under 15 years and 80·6 per cent. were under 25 years; that is, 2 out of 3 were infected before the age of 15 years and 3 out of 4 before the age of 25 years. Evidence that almost all the patients belonged to the poorer classes of the City can be adduced from the size of house inhabited. Of all patients, 18·6 per cent. lived in one-apartment houses, 46·5 per cent. in two-apartment houses, 17·0 per cent. in three-apartment houses, and 3·9 per cent. in houses of four apartments and upwards, while 14·0 per cent. resided in institutions. The 1931 census return showed that of the population in Glasgow inhabiting private houses 11·0 per cent. were in one-apartment houses, 44·4 per cent. in two-apartment houses, 25·4 per cent. in three-apartment houses, and 19·2 per cent. in houses of four or more apartments. Intra-domestic infection is regarded as a relatively important factor in the spread of this disease. Among this series of 129 cases there were two instances of 2 patients in the same family group, two instances of 3 in the same family group, and one of 4 in the group. These figures under-estimate the importance of case-to-case infection within the house, because in some of the family groups there have been other cases which for various reasons, e.g., "cured" or "left Glasgow," were removed from the registers before the end of 1933.

Every endeavour was made to obtain the attendance of home contacts of new cases at the dispensary. Of the 60 home contacts examined, 2 were discovered to be suffering from definite trachoma, 1 was doubtful, and 25 were found to be suffering from varying degrees of conjunctivitis. In the remaining 32 contacts no evidence of trachoma was noted.

Trachoma Dispensary.—During the year 195 individuals attended the clinic, the total number of attendances for the year being 4,184, of which 1,772 were consultations with the ophthalmic

surgeon and 2,412 were for treatment by the nurse. Three operations for expression and two for removal of chalazion were carried out at the clinic. The number of home visits paid by the nurse was 875.

Hospital Cases.—During 1933 there were 25 patients, of whom 8 were males and 17 females, in the trachoma wards at Stobhill Hospital. In this number were 5 patients from outwith the city admitted by arrangement with the appropriate local authority. The cases may be classified as follows:—Early trachoma, 7; recurrent, 8; complications of trachoma such as lid deformity, &c., 6; cases regarded as simply folliculosis and not trachoma, 4. The operations performed were:—Expression of lids, 11; cauterisation, 17; peritomy, 8; lid operations, 3; excision of eyeball, 4. In 1 patient, who had become completely blind, it was unfortunately necessary to enucleate both eyeballs on account of intractable pain which could not be otherwise relieved.

No alteration was made in the methods of treatment employed for the last few years. For acute cases expression of the follicles was performed, followed by applications of copper sulphate, while for recurrent cases a modified method along similar lines was adopted. In cases of folliculosis which were not regarded as suffering from trachoma expression alone gave excellent results.

Bacteriological Investigation.—During the year material from all cases was examined for the presence of B. Granulosis (Noguchi) by Dr. Urquhart, of the Pathological Department of the hospital. So far as the year's investigation went, B. Granulosis cannot be recovered from trachoma cases occurring in Glasgow. The bacillus, however, was isolated from 1 patient, who, as a matter of fact, was suffering not from trachoma but from a folliculosis.

Clinical Note on Dispensary Cases by Dr. M'Millan.—Several acute cases of folliculosis have been seen at the dispensary during 1933, and quite recently an epidemic of K.-Weeks conjunctivitis, in some cases mixed with the Morax diplobacillus, was noted accompanying such cases. It is found that cases of conjunctivitis which are resistant to treatment and show enlarged follicles are apt to be classed as granular and so notified. At the same time I think it is better that such cases should be sent to the dispensary for examination, since it is only after repeated observation in many cases that they can be classed as positive, doubtful, or negative. Indeed, I am of opinion that many cases of folliculosis improve quicker after expression, and that this can only be done effectively under a general anaesthetic. On the whole outlook, I think trachoma in Glasgow is mainly chronic in character and well in hand, although sporadic cases occasionally crop up.

MALARIA AND DYSENTERY.

These diseases were made compulsorily notifiable on demobilisation of the army, and a considerable number of cases of malaria were registered in the two following years, 1919 and 1920. Since then, however, the numbers registered have varied between 12 in 1932 and 32 in 1929. In 1933 the number recorded was 19, of which 11 were discovered on board an incoming vessel from West Africa, so that only 8 occurred in the City. Of the total, 10 were removed to hospital and 2 treated in other institutions. Most of the cases were registered in the last quarter of the year.

MALIGNANT TERTIAN MALARIA.

Outbreak on s.s. "Hindpool" ex Pepel, Sierra Leone.

On 23rd September, 1933, the s.s. "Hindpool," which was returning from Pepel, a new port in Sierra Leone, with the first cargo of iron ore ever sent to this country from this port, arrived at Greenock with six of her crew in an extremely ill condition due to malignant tertian malaria.

Pepel is west of Freetown in Sierra Leone, and, according to reports obtained from the captain of the ship, it is heavily infested with mosquitoes. In spite of instructions to the contrary, several of the crew went ashore at Pepel and stayed there overnight, but some of those who latterly sickened from malaria did not go ashore and must have been infected on board ship, while she was moored at Pepel. The amount of sickness among the crew on the voyage was so great that the working of the ship was rendered almost impossible. Three cases, who were severely ill, and one of whom died, were landed at Fishguard, and those not so severely ill, at that time were allowed to come on to Glasgow. Quinine was administered to all the sick men on board this ship by the captain and this probably saved the lives of some of the cases who came on to Glasgow. The master of the ship stated that the amount of quinine given to each man was about 15 grains per day by mouth.

When the ship moored at Rothesay Dock on 23rd September, six patients, whose ages varied from 20 to 60 years, but who were all very acutely ill, were removed to Belvidere Hospital. Blood films taken from these patients at Greenock were positive for the parasite of malignant tertian malaria. In Belvidere Fever Hospital the patients were treated with quinine bichloride given by the mouth. Intramuscular or intravenous administration of the drug was not considered necessary in view of the quinine given them by the master of the ship. Soon after their admission to hospital the patients began to recover, and all were dismissed well.

The remains of mosquitoes found squashed in the sleeping quarters were identified, as far as possible, as *Anopheles bifurcatus*.

In 1933 there were 71 cases of dysentery, compared with 136 during the previous year. Of the total, 18 occurred in Kinning Park, while 15 were registered in institutions, 13 of whom were children in one institution. This outbreak, from which all recovered, was due to the Sonne type of bacillus, and occurred towards the end of August and the beginning of September. The origin was not traced.

AN OUTBREAK OF MILD SONNE DYSENTERY ASSOCIATED WITH ICE CREAM.

An outbreak of Sonne dysentery, which presented some features of epidemiological interest, occurred in the Ibrox district. On 25th August, 12 children, whose ages ranged from 2 to 13 years, took ill with symptoms of intestinal catarrh. Diarrhoea, moderately severe, was present in every case, the stools being loose,

green and mucoid. In two cases a little blood was present. Abdominal pain was complained of in practically every instance, and one child suffered from tenesmus. At the onset of the illness vomiting was present in seven of the cases, and there was said to be mild delirium in four. The duration of the illness was only two or three days, after which complete recovery ensued. The children all lived in a good class residential district. The street in which 11 of them resided is a short cul-de-sac, and the remaining child lived in a neighbouring block. The children, who were all clean and well cared for, tended to play in the cul-de-sac in two groups—an older group of three boys, and a younger group.

The parents suspected ice-cream to be the cause of the illness, because every child had consumed ice-cream from the same source, namely, an itinerant vendor who attended at the corner of the cul-de-sac every day at lunch time. The vendor, a youth J.R., was employed by an Italian ice-cream merchant, D.M. The following is a list of the cases showing the dates on which ice-cream was eaten and the results of the bacteriological examinations.

No.	Age.	Sex.	Date of Consumption of Ice Cream from Vendor.	Time of Sickness on 25th August.	Bacteriological Examination for Sonne Dysentery.	
					Date Specimen submitted.	Result
{ 1	6½	F.	Aug. 24	1 a.m.	Aug. 28	Negative
{ 2	3	M.	Do.	9 p.m.	Do.	Positive.
{ 3	5	F.	Aug. 21, 22, 23	2 a.m.	Do.	Negative.
{ 4	12	M.	Do.	5 p.m.	Do.	Positive.
5	8	M.	Aug. 22	3 a.m.	Do.	Positive
{ 6	3	F.	Aug. 22, 23, 24	4 a.m.	Do.	Positive.
{ 7	2	M.	Do.	5 a.m.	Do.	Positive.
8	3	F.	Aug. 23	2 p.m.	Do.	Negative.
9	10	F.	Aug. 22, 23	4 p.m.	Do.	Positive
10	10	M.	Aug. 23, 24	6 p.m.	Do.	Negative.
11	13	M.	Aug. 22, 23	p.m.	Do.	Positive.
12	3	F.	Aug. 24	11 p.m.	Sept. 4	Negative.

Note.—Cases No. 1 and 2 were brother and sister.

Cases No. 3 and 4 were brother and sister.

Cases No. 6 and 7 were brother and sister.

The ice cream vendor on his daily round sold ice cream in other parts of the South Side of the City as well as Ibrox, namely, in certain parts of Pollokshields and in Kinning Park. No other cases of similar illness in these districts were reported. The ice cream vendor himself had not been recently ill. Specimens of stools examined on 28th August and 8th September were reported negative for organisms of the dysentery and food poisoning groups. A specimen of blood, examined on 20th September, was reported negative for serological reaction to *B. dysenteriae* (Flexner Y) and *B. dysenteriae* Sonne. The youth lived with his father and mother, neither of whom gave any history of recent illness, and specimens of stools from the father and mother, examined on 5th September, were reported negative. The employer of the ice cream vendor, D.M., his wife and their five children were all examined between 30th and 31st August, and the specimens of faeces from the youngest child was reported positive for *B. dysenteriae* Sonne. It was elicited that this child had been ill about 21st August with vomiting and diarrhoea, and she was admitted to hospital on 31st August, where further specimens of faeces were reported negative. Specimens of faeces from the Italian ice cream merchant and his family when re-examined between 4th and 7th September, were found negative. A close inquiry was instituted into other possible sources of infection. The milk, fruit, vegetable, butcher meat, grocery and bakery supplies all differed in each of the affected families. As already stated

the children lived in a good class district where the sanitation was above suspicion. They had not attended any outing or party. It is of interest to record that only one secondary case was notified, namely, a man of 45 years, who was the father of two of the affected children. He began to suffer from diarrhœa on 5th September, and a specimen submitted for examination the following day was reported positive for Sonne dysentery.

Summary.—Twelve cases of mild Sonne dysentery among children of 2-13 years of age are reported. The 12 children all took ill on the same day, and 11 of them lived in one street and the remaining case in a neighbouring block. Sanitation and housing conditions were distinctly good. The only article in common was ice cream obtained from a certain itinerant vendor. In support of the hypothesis that this supply of ice cream was the source of the outbreak were the facts (1) that the children all consumed ice cream, and (2) that one member of the family of the Italian ice cream merchant, who employed the vendor, was found to have suffered from what was probably a mild attack of Sonne dysentery. In any case one specimen of fæces from this child, examined on 30th August, was found positive for Sonne dysentery. As evidence exonerating the ice cream, it can be pointed out that the same supply was distributed in other districts from which no cases of dysentery were reported and that there was a considerable degree of variation between the consumption of the ices and the times of sickening for example, cases No. 1 and 2 ate ice-cream only on 24th August; case No. 5 only on 22nd August; and case No. 8 only on 23rd August—yet all the children first complained of illness on 25th August. On the whole, however, the evidence would suggest that this mild outbreak of Sonne dysentery was attributable to ice-cream.

INFECTIVE JAUNDICE.

One case was reported during 1933, although compulsory notification is not now enforced.

SECTION V.

RESPIRATORY DISEASES AND TUBERCULOSIS.

During 1933 there was no marked prevalence of influenzal pneumonia, and, the year being otherwise favourable, the deaths from respiratory diseases were considerably fewer, 2,288, compared with 3,186 during the preceding year. The fluctuations in the death-rates from the three principal groups of respiratory diseases are shown in the following table:—

Year.	Pneumonia.		Influenza.		Other Respiratory Diseases.	
	Deaths.	Rate per million.	Deaths.	Rate per million.	Deaths.	Rate per million.
1922, ...	2,303	2,143	767	714	1,477	1,374
1923, ...	1,400	1,303	65	61	972	905
1924, ...	2,198	2,047	412	384	1,283	1,195
1925, ...	1,665	1,551	210	196	1,098	1,023
1926, ...	1,758	1,638	386	360	975	909
1927, ...	1,792	1,644	204	187	881	808
1928, ...	1,801	1,653	210	193	813	746
1929, ...	2,447	2,247	378	806	1,212	1,113
1930, ...	1,774	1,629	160	147	852	782
1931, ...	1,533	1,408	207	190	671	617
1932, ...	1,917	1,750	454	415	815	744
1933, ...	1,346	1,220	244	221	698	632

The lower death-rates under each of the headings in 1933 correspond with a considerable reduction in the number of cases reported, 4,846 for acute primary pneumonia and 348 for acute influenzal pneumonia, compared with the respective figures of 6,890 and 665 for 1932. Of the total cases of acute primary pneumonia, 2,510 were removed to fever hospitals and 694 dealt with in the general hospitals. The pressure on hospital accommodation caused by the continued high prevalence of scarlet fever made it necessary, as in former years, to select patients after home visitation by a health visitor. Home nursing was also undertaken, and in a number of instances grants of milk, &c., were made in necessitous cases. The proportion of notified cases removed to hospital is shown in the following table:—

Year.	Average Annual Cases Notified.	Percentage removed to Hospital.	Year.	Cases Notified.	Percentage removed to Hospital.
1921-25	5,601	54	1931	5,510	69
1926-30	6,804	60	1932	7,555	53
			1933	5,194	65

PULMONARY TUBERCULOSIS.

Morbidity Statistics.—The number of cases of pulmonary tuberculosis registered during the year was 1,616. This is 106 less than in the previous year. The greater part of the reduction has been in respect of females of ages over 25. The number of female cases registered in the age-group 15-25 is 280, which, with the exception of one year, namely, 1929, is the highest figure recorded since 1914.

In 1914 there were 2,410 notifications received. The decline to the present number which has taken place since then is almost entirely confined to the age-groups under 15 and over 25 years.

The following table shows the age-distribution of the cases notified in 1933:—

	-5	-10	-15	-20	-25	-35	-45	-55	-65	+65	Total.
Males, ...	14	32	48	99	122	194	170	148	80	19	926
Females,	16	23	51	125	155	152	84	45	28	11	690

Of the total cases registered, 1,481 were notified under the Tuberculosis Regulations, and 67 per cent. of these were notified by private practitioners. In 72 cases, or 4.9 per cent. of the total, information was obtained only after the patient's death. This percentage compares with 8.5 in the previous year.

The total number of cases of pulmonary tuberculosis on the dispensary registers at the end of the year was 6,163, of whom 2,858 have had tubercle bacilli in the sputum at some time during their illness. The percentage of these "sputum positive" cases on the register is slowly rising—from 36 per cent. in 1929 to 46.3 per cent. in the year under review. It may also be pointed out that the numbers under observation have steadily increased each year since 1929—from 5,527 to 6,163.

Stage of Disease at Notification.—There is still a great deal of time lost through delay in notification of cases. In many instances it is certain that examination of the sputum at an earlier date would have confirmed the diagnosis and ensured treatment while there were still prospects of a good result. Increased use should be made of the laboratory facilities by practitioners, especially if in doubtful cases special methods of examination by cultural methods or by inoculation are indicated.

Mortality Statistics.—Death-rates from pulmonary tuberculosis per 100,000 persons living are shown for Glasgow since 1881 in the following table:—

GLASGOW.—DEATH-RATES FROM PULMONARY TUBERCULOSIS.

1881-1890, ...	2·680 per 1,000	1925, ...	0·943 per 1,000
1891-1900, ...	2·015 „	1926, ...	0·876 „
1901-1910, ...	1·533 „	1927, ...	0·869 „
1911-1915, ...	1·346 „	1928, ...	0·876 „
1916-1920, ...	1·191 „	1929, ...	0·941 „
1921, ...	1·007 „	1930, ...	0·805 „
1922, ...	0·946 „	1931, ...	0·865 „
1923, ...	1·029 „	1932, ...	0·890 „
1924, ...	1·026 „	1933, ...	0·824 „

With the exception of 1930, the last is the lowest death-rate recorded in Glasgow.

The following is a table showing a comparison between the rates in certain large towns:—

PHTHISIS DEATH-RATES PER 100,000 IN CERTAIN TOWNS.

	1920.	1925.	1930.	1931.	1932.	1933.
Glasgow, ...	106	94	81	87	89	82
Edinburgh, ...	85	95	80	70	70	70
Dundee, ...	99	87	76	73	61	58
Aberdeen, ...	93	97	51	69	46	54
London, ...	106	95	87	90	82	82
Liverpool, ...	141	130	123	115	112	116
Manchester, ...	133	131	115	112	100	100
Birmingham, ...	95	98	90	91	83	85

The number of deaths from pulmonary tuberculosis during the year was 909, compared with 974 in 1932, a reduction of 6·7 per cent.

Of the deaths from pulmonary tuberculosis, 538, or 59·2 per cent., died in institutions. This has an important bearing upon the question of removal of sources of infection from the community, because these terminal cases are usually highly infectious and dangerous to other members of the household.

Tuberculosis Administration.—During the year 2,960 primary attendances at the dispensaries are recorded and 57,782 subsequent attendances. The domiciliary visits paid by the tuberculosis health visitors number 53,218.

The rehousing of tuberculous families who are living under circumstances which preclude the possibility of reasonable isolation of the infective case at home continues to receive attention. From 1929 when the scheme for rehousing of tuberculous persons was introduced up till the end of 1933, 368 families have been admitted to Corporation houses on account of tuberculosis. Towards the end of 1933 a survey was made of the whole situation, and it was found among other things that there was a considerable delay between the time of recommendation

and the time when the patient and his family were transferred to the new house. In addition, large numbers of applications had been made in which the applicant was unable or refused to take advantage of the offer of a new house. Many patients also were anxious for admission to a housing scheme in some particular area of the city, and for this reason refused the house which was offered. On the whole it was found that rehousing was proceeding slowly. Since the decision of the Corporation to give priority to overcrowded phthisical families in the ordinary rehousing schemes when houses in these schemes fell vacant, much better progress has been made. At the beginning of this year all previous applications were scrutinised and either cancelled or remade, with the result that, up to the present date (July, 1934), out of 286 applications 106 families have been settled in a new house.

It became apparent from a study of the previous years' experience that, if the rehousing of tuberculous families was to be a successful measure, delay between the time of application and rehousing must be reduced as much as possible. The rehousing of the families should, in fact, be carried out with an expedition comparable with that desirable in the admission of a patient to an institution for treatment.

Of the notifications of pulmonary tuberculosis which were made in 1932, 265 cases were found to be living under overcrowded circumstances. Of these 265 cases, 98, or 37 per cent., were reported dead in March, 1934. Many of the families have been rehoused or recommended; in others the overcrowding has ceased to exist or the family has gone to live elsewhere; and in the remainder the question of rehousing is being considered.

Of the total cases of pulmonary tuberculosis notified during 1933, 56·7 per cent. came from houses of one and two apartments.

Another point which it is desirable to make is that until the position with regard to overcrowding becomes easier, it is absolutely necessary to have a firm definition as to what constitutes a phthisical family. Applications for rehousing on account of tuberculosis are only entertained where the patient is suffering from pulmonary tuberculosis and has been found to excrete tubercle bacilli in the sputum. Until such cases have been dealt with it is impossible to accept applications from families where non-pulmonary or non-infectious forms of the disease exist.

Institutional Provision.—The institutional provision for the treatment of pulmonary tuberculosis remains practically the same as last year. Ten beds, however, have been taken over in Robroyston Hospital for the treatment of cases of abortion, so that the provision for phthisis has been reduced by that number. The following table shows the admissions to institutions of

patients suffering from pulmonary and non-pulmonary tuberculosis since 1922:—

Year.			Local Authority Hospitals.	Sanatoria.	General Hospitals.	Total.
1922,	...	...	2,018	714	604	3,336
1923,	...	...	1,959	690	555	3,204
1924,	...	...	1,840	499	573	2,912
1925,	...	...	1,531	457	606	2,594
1926,	...	...	1,637	425	738	2,800
1927,	...	...	1,458	413	615	2,486
1928,	...	...	1,429	418	819	2,666
1929,	...	...	1,501	494	753	2,748
1930,	...	...	1,762	608	549	2,919
1931,	...	...	2,188	477	289	2,954
1932,	...	...	1,981	457	411	2,849
1933,	...	...	1,906	350	503	2,759

Collapse Therapy.—During recent years increasing attention has been paid to the treatment of pulmonary tuberculosis by collapse therapy. This includes artificial pneumothorax, the various forms of thoracoplasty, evulsion of the phrenic nerve, &c. Of these procedures, artificial pneumothorax is that of widest application. This is a method of treatment which gives excellent results in suitable cases where the disease is entirely or almost entirely confined to one lung. There are at present in Glasgow (December, 1933) 159 outdoor patients with artificial pneumothorax attending regularly for treatment. Of these patients, 137, or 86 per cent., had tubercle bacilli in the sputum prior to the commencement of treatment. At the time of review 78 per cent. of the cases were negative or had no sputum at all. Most of the patients were of the fibrocaseous type occurring mostly in the age-groups up to 30 years, and many of them at the commencement of treatment were acutely ill, having fever, cachexia, and in some cases laryngitis. The success of pneumothorax as a measure dealing with tuberculosis depends upon the establishment of the diagnosis at an early stage of the disease and the immediate admission to an institution. The number of cases found to be suitable shows signs of increasing year by year, and in order to provide a centre where the operation of "refilling" these cases could be carried out satisfactorily one flat at Baird Street Auxiliary Hospital was adapted for this purpose. A small fluoroscopic X-ray unit (Newton and Wright Non-Rectified) was installed and a special nurse put in charge of the work. Each dispensary physician has a session at Baird Street and attends to the treatment of patients from his own district. So far, it appears that the arrangement is proving satisfactory.

Non-Pulmonary Tuberculosis.—Table 1 shows the cases of non-pulmonary tuberculosis registered between 1914 and 1933, with location of disease and sex. There is to be recorded during 1933 a further substantial decrease in the incidence of non-pulmonary tuberculosis.

TABLE I.
SHOWING NON-PULMONARY TUBERCULOSIS CASES REGISTERED DURING 1914-1932,
WITH LOCATION OF DISEASE AND SEX.

Year.	Glands.		Bones and Joints.		Abdomen.		Meninges.		Multiple.		Others.		Total.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1914*	159	153	239	186	79	45	73	47	11	18	70	62	631	511
1915	176	232	192	156	135	104	137	123	52	27	71	59	763	701
1916	199	216	185	138	155	136	136	140	40	18	75	64	790	712
1917	203	266	196	170	155	113	93	95	41	34	70	57	758	735
1918	186	265	158	143	119	128	92	107	34	30	78	72	667	745
1919	138	178	164	127	126	123	93	86	40	29	56	47	617	590
1920	138	145	193	168	116	112	89	83	39	29	44	29	619	566
1921	149	171	165	127	116	84	78	74	27	29	68	53	603	538
1922	134	147	141	124	130	111	75	66	20	24	42	36	542	508
1923	145	155	181	129	145	118	102	75	16	15	78	75	667	567
1924	149	150	145	130	140	144	104	81	35	36	65	42	638	583
1925	145	137	150	139	131	114	75	65	29	24	54	52	584	531
1926	135	137	142	131	115	109	78	57	24	35	35	33	529	502
1927	131	148	186	134	127	106	89	61	22	17	45	35	600	501
1928	132	152	150	138	113	99	84	86	20	10	61	62	560	547
1929	117	154	138	107	109	104	86	85	10	12	38	32	498	494
1930	111	130	124	130	129	117	98	116	9	7	44	32	515	532
1931	101	139	137	115	101	99	90	87	12	14	50	31	491	485
1932	98	141	134	104	114	105	92	68	6	9	48	38	492	465
1933	99	102	115	109	83	70	59	56	12	8	44	37	412	382

* Figures for six months ending 31st December, 1914.

Table II shows the age-distribution of cases of non-pulmonary tuberculosis registered since 1914. It will be seen from the table that there has been a substantial decrease in the incidence of these forms of tuberculosis between the ages of 1 to 5 years and also at ages over 15. The total number of cases registered is 794, compared with 957 in the previous year—a reduction of 17 per cent.

TABLE II.
AGE-DISTRIBUTION OF NON-PULMONARY TUBERCULOSIS CASES REGISTERED DURING EACH YEAR
SINCE COMMENCEMENT OF NOTIFICATION ON 1ST JULY, 1914.

Year.	Under 1 year.		1-5 years.		5-10 years.		10-15 years.		Over 15 years.		Total.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1914	60	21	132	90	140	102	134	115	165	183	631	511
1915	59	49	236	161	164	140	112	108	192	243	763	701
1916	64	45	244	152	149	123	108	164	225	228	790	712
1917	52	48	190	134	157	156	117	149	242	248	758	735
1918	30	33	163	169	137	125	129	142	208	276	667	745
1919	45	28	151	109	142	123	78	136	201	194	617	590
1920	57	35	143	122	128	137	110	94	181	178	619	566
1921	51	35	157	111	133	122	81	94	181	176	603	538
1922	38	28	175	150	103	87	71	79	155	164	542	508
1923	59	19	214	165	116	112	86	79	192	192	667	567
1924	50	39	212	171	96	99	103	85	177	189	638	583
1925	48	22	184	144	111	103	71	77	170	185	584	531
1926	28	22	162	127	109	88	63	78	167	187	529	502
1927	31	28	171	102	130	82	73	77	195	212	600	501
1928	29	17	152	104	115	112	83	60	180	255	559	548
1929	32	27	132	102	111	95	63	66	160	204	498	494
1930	31	27	145	137	116	124	62	74	161	170	515	532
1931	26	17	126	106	101	97	67	71	171	194	491	485
1932	20	18	130	80	94	78	72	75	176	214	492	465
1933	15	18	79	60	94	81	65	61	159	162	412	382

The institutional provision remains practically unchanged. Owing to the reduction in the incidence of non-pulmonary tuberculosis, a certain number of beds have become available and are used for the treatment of outside authority cases for which payment is made to the Corporation. About 20 beds in Mearnskirk are used for the treatment of general orthopædic cases, and a varying number of beds are occupied by cases of acute poliomyelitis transferred from the fever hospitals after they have passed through the infectious stage of the disease. A few beds are available again at Strathblane Hospital.

The following table shows the death-rate per million of the population from non-pulmonary forms of tuberculosis since 1901, with meningitis and abdominal tuberculosis shown separately:—

GLASGOW.—DEATH-RATE PER MILLION OF THE POPULATION.

Year.	Tuberculous Meningitis.	Abdominal Tuberculosis.	Other Forms.	Total.
1901-1905, ...	319	301	258	878
1906-1910, ...	416	278	255	949
1911-1915, ...	285	197	183	665
1916-1920, ...	210	167	170	547
1921-1925, ...	163	103	122	388
1926, ...	142	69	106	317
1927, ...	148	62	103	313
1928, ...	148	59	110	317
1929, ...	140	64	99	303
1930, ...	182	51	104	336
1931, ...	153	55	110	318
1932, ...	134	46	89	269
1933, ...	96	44	106	246

BAIRD STREET ACTINOTHERAPY CLINIC.

The results of treatment in 184 patients who ceased attending at the clinic during the past year are shown in the following table:—

	NO. OF PATIENTS.				Average Duration of Treatment in Months.		
	Healed.	Improved.	Not Improved.	Total.	Healed.	Improved.	Not Improved
Adenitis, ...	39	35	25	99	10·7	5·5	4·8
Lupus, ...	12	4	5	21	21·5	14·8	7·8
Abdominal Disease, ...	3	5	7	15	8·7	6·2	3·4
Bone and Joint Diseases, ...	2	3	6	11	13·0	10·7	7·3
Tuberculosis Cuti, ...	4	5	—	9	7·8	2·8	—
Dactylitis, ...	3	3	—	6	9·0	6·7	—
Others, ...	—	2	2	4	—	2·5	6·3
Miscellaneous, ...	—	—	—	19	—	—	—
	63	57	45	184			

In the above table the term “healed” includes cases showing exceptional improvement, the term “improved” implies that

improvement has been well-marked, and the term "not improved" that there has been either no response to treatment or that response has been slight. The cases still on the register of the clinic at the end of the year were 334, the corresponding figures for 1932 being 224 patients who ceased attending at the clinic and 257 who remained on the register at the end of that year. Cases having less than one month's treatment have been excluded.

Adenitis.—Of the 184 patients who ceased attending, rather more than 50 per cent. were cases of glandular disease. Of those included under the columns "healed" and "improved" about two-thirds were associated with ulceration of the skin and sinus formation, and in practically all cases the area of skin involvement was fairly firmly healed before treatment was stopped. In most of the "not improved" group no involvement of the skin had occurred, the glands being firm and showing little tendency to break down. The majority of cases of glandular enlargement respond gradually to ultra-violet ray therapy, though some palpable enlargement of the glands usually persists. In a few cases, however, little response is shown even to prolonged treatment, the glands remaining large and disfiguring, and the question of removal by operation has to be considered. Improvement under treatment is not to be expected where the glands are small and fibrous.

Lupus and Tuberculosis of the Skin.—The results of treatment in the cases of lupus who ceased attending during the past year were good. In all cases, with one exception, the disease was of limited extent, and in a number local treatment with caustics was combined with ultra-violet ray treatment. Cases of tuberculosis of the skin, other than lupus, showed satisfactory response

Abdominal Disease.—Only mild cases receive outdoor treatment, but the results of treatment were not very satisfactory. Failure to improve was associated in the majority of cases with insufficient treatment.

Diseases of Bones and Joints, including Dactylitis.—Diseases of bones and joints, other than dactylitis, do not respond well to treatment, though the general condition of the patients is much improved. Dactylitis, however, responds well, and in all cases treated the results were very satisfactory, although in those classified as "improved" a further period of treatment would have been advisable.

Others.—Included in this group are 3 cases of genito-urinary tuberculosis and 1 case with multiple lesions. While the general health improved under treatment, there was little local response.

Miscellaneous.—This group is largely composed of cases of bronchitis and debility occurring among contacts or in cases under observation, and these showed satisfactory improvement.

GOVAN TUBERCULOSIS LIGHT CLINIC.

During 1933 there were 101 sessions of this clinic held thrice weekly during the months from January till May and from October till December. The number of patients treated and the amount of treatment given is shown in the following table:—

	Male.	Female.	Total.
Number of Patients, ...	19	23	42
Number of Attendances, ...	580	638	1,218

Cases found suitable for ultra-violet ray therapy were fewer than in previous years, partly owing to the increase in the amount of hospital accommodation available. Most of the cases (83 per cent.) suffered from tuberculous adenitis, and the results of treatment were very satisfactory in these cases, particularly when they were complicated by sinus formation. The success of treatment is no doubt largely due to the regular dressing of sinuses carried out at the clinic sessions. The cases of lupus, which were all of the chronic type, showed little improvement.

This table shows the result of treatment:—

Lesion.	Total Cases.	Improved.	Not Improved.
Adenitis	35	28	7
Lupus,	5	2	3
Others,	2	2	—
Total,	42	32	10

X-RAY WORK.

The feature of the radiographic work in the hospitals during 1933 has been the increase in the number of cases. This has been brought about largely by the increase in the number receiving artificial pneumothorax treatment. These require both screen and film examination to control the amount of lung collapse, the amount of fluid, adhesions, &c. Another addition

to the Ruchill Hospital work has been the increased use made of X-ray examination by the doctors at the ante-natal clinics. During the past year many cases have been sent for diagnosis of the presentation or the presence of a multiple pregnancy. At Ruchill the number of patients of whom films were taken has increased from 4,315 in 1932 to 4,771 in 1933. In addition to this, 2,050 patients were screened, largely in connection with the artificial pneumothorax work. At Robroyston there has been a considerable increase in the total number of cases examined. This has risen from 507 to 639. The proportion of chest examinations at Robroyston is now very high, and these number 336, being almost 50 per cent. of the total. The number of cases examined at Mearnskirk was practically the same as in 1932.

The number of cases examined in the various institutions is given in the following table:—

		Indoor.	Outdoor.	Screened only.	Filmed.	Total.
Ruchill, ...	...	2,465	4,356	2,050	4,771	6,821
Robroyston, ...	—	—	—	—	639	639
Mearnskirk, ...	—	—	—	63	1,174	1,237

The number of outdoor cases attending for ultra-violet light treatment has diminished owing to the presence of other clinics in different parts of the city, but this form of treatment has been used for indoor cases at Ruchill with great benefit in patients recovering from measles and whooping-cough. The number of treatments given were:—Outdoor, 277; indoor, 1,892.

SECTION VI.

VENEREAL DISEASES.

General.—From the statistical point of view, the principal features to be noted in 1933 are the diminution in the number of male cases of early syphilis and the continuance of the upward trend which has been apparent in the past few years of acute gonorrhœa in the male. There is an increase in the female cases reporting in the primary stages of syphilis, which bespeaks better and earlier diagnosis. There is no change in the number of cases of acute gonorrhœa in the female. Another point is the increase in the number of cases of late syphilis. The attendances are on the whole well maintained, and especially with regard to early syphilis show a very marked improvement over previous years.

Table A shows the number of new patients admitted to the various treatment centres in 1933:—

TABLE A.

NEW PATIENTS ADMITTED TO THE VARIOUS TREATMENT CENTRES IN 1933.

PATIENTS:—															
<i>Hoc Centres—</i>															
<i>Male—</i>															
Black Street, Broomielaw and Bellahouston, ...	M.	66	119	63	4	165	11	6	1416	192	63	507	795	3407	131,661
<i>Female—</i>															
Black Street and Govan, ...	M.	—	—	—	—	—	13	—	—	—	—	—	6	19	387
	F.	1	14	24	—	93	33	—	101	39	—	143	112	560	15,515
<i>Other Centres—</i>															
Black Hospital, ...	M.	—	—	—	—	—	25	—	—	—	—	1	4	30	467
	F.	1	12	19	6	77	33	—	6	258	—	2	42	456	13,981
Western Infirmary,	M.	2	3	9	1	75	7	3	—	1	1	3	26	131	5,532
	F.	2	4	16	—	37	7	3	16	1	—	25	17	128	5,609
Victoria Infirmary,	M.	2	1	1	3	8	1	—	—	—	—	—	—	16	560
	F.	—	—	4	1	19	2	—	—	—	—	—	—	26	735
Eye Infirmary,	M.	—	—	—	—	33	15	—	—	—	—	—	2	50	3,259
	F.	—	—	—	—	11	18	—	—	—	—	—	1	30	3,019
Royal Hospital for Sick Children,	M.	—	—	—	—	—	8	—	—	—	—	—	76	84	598
	F.	—	—	—	—	9	6	—	—	—	—	—	65	80	1,314
<i>De-Natal Centres—</i>															
Maternity Hospital,	M.	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	F.	—	2	2	—	29	6	—	1	—	—	79	73	192	1,925
Child Welfare Clinics, ...	M.	—	—	—	—	—	5	—	—	—	—	—	6	11	111
	F.	—	—	—	—	44	11	—	1	2	—	159	9	226	2,256
Total No. of Out- Patients, ...		74	155	138	15	600	201	12	1541	493	64	919	1234	5446	186,929
PATIENTS:—															
Dividere Hospital,	M.	—	3	2	—	2	—	—	19	3	4	2	6	41	—
Black Hospital, ...	M.	—	—	—	—	20	—	—	—	—	—	—	6	26	—
	F.	—	13	17	2	29	32	—	4	175	—	—	5	277	—
Other Institutions,	M.	—	—	—	—	19	1	—	—	1	—	—	—	21	—
	F.	—	—	—	—	7	7	—	—	1	—	—	—	15	—
Total No. of In- Patients, ...		—	16	19	2	57	60	—	23	180	4	2	17	380	—
Grand Total, ...		74	171	157	17	657	261	12	1564	673	68	921	1251	5826	—

It may be considered advisable to summarise and re-arrange the information in this table so that a clearer impression may be given of the function of the Venereal Diseases Scheme, and to indicate more definitely the distinction between the early or acute forms of venereal disease and those which are more chronic. To those not absolutely familiar with the treatment of venereal diseases it must be made plain that the apparent incidence of these diseases and the public health functions of venereal diseases schemes must be considered in relation to acute syphilis and gonorrhœa rather than chronic gonorrhœa and the late manifestations of syphilis. The following table, therefore, puts the information contained in Table A in a form which can be readily grasped:—

	Ad Hoc Treatment Centres		Glasgow: All Centres.
	Males.	Females.	
Acute Syphilis (includes Primary, Secondary, and Latent in the First Year of Infection),	258	39	431
Acute Gonorrhœa,	1,416	101	1,564
Total Acute Venereal Disease, ...	1,674	140	1,995
Late and Congenital Syphilis,	189	126	918
Chronic Gonorrhœa,	192	39	673
Chronic Venereal Disease,	381	165	1,591
Other Diseases, including Soft Sore, Septic Balanitis, etc.,	570	143	989
Non-Venereal,	801	112	1,251

67 of
these were
under one
year of
age

From this table it is apparent that the “ad hoc” centres continue to serve adequately the purpose for which they were instituted, in so far as they treat almost all the acute cases of venereal disease which come under the scheme.

Syphilis.—The volume of acute syphilis dealt with remains practically the same as in 1932. In the “ad hoc” centres, however, there is an indication of a continuation of the down-

ward trend already mentioned. The following table shows the annual figures for acute syphilis in these centres since 1929:—

	Males.	Females.	Total.
1929	412	39	451
1930	406	46	452
1931	296	41	337
1932	268	39	307
1933	258	39	297

There are also fewer cases of congenital syphilis under one year, although there has been a slight increase at later ages.

Gonorrhœa.—There has during the past year been a considerable increase in the number of cases of gonorrhœa reporting for treatment. The ratio of acute syphilis to acute gonorrhœa in male cases reporting at the “ad hoc” centres is now 1 to 5·5. This should be regarded as approaching a satisfactory ratio, and the slight reduction in the number of cases of syphilis during the past few years, considered in relation to this ratio, most probably means that infections by syphilis are becoming less frequent in the community.

In-Patient Treatment.—Table B shows the admissions for in-patient treatment. It should be noted that in Belvidere Hospital there has been always during the year a certain number of vacant beds. This is due to the fact that it is often difficult to persuade patients that it is to their advantage to accept indoor treatment, even in the presence of extensive and acute disease.

TABLE B.

SHOWING TOTAL NUMBER OF PATIENTS ADMITTED FOR IN-PATIENT TREATMENT.

	Sex.	Primary Syphilis D.G. + W.R. —	Primary Syphilis W.R. +	Secondary Syphilis.	Latent Syphilis. (1st year). All Later Stages.	Congenital Syphilis.	Extra-genital Infection.	Acute Gonorrhœa.	Chronic Gonorrhœa.	Soft Chancre.	Non-Specific Venereal Infection.	Other than Venereal.	Total Admissions.	Aggregate Days' Residence.	Average Days' Residence.	
re Hospital, ...	M.	3	18	12	3	16	2	—	108	17	21	7	8	215	6,464	30·0
treet, ...	M.	—	—	—	—	—	6	—	—	—	—	—	6	565	94·1	
	F.	1	4	6	—	5	5	—	26	7	—	5	9	68	3,408	50·1
ospital, ...	M.	—	—	—	—	—	23	—	—	—	—	6	29	3,243	111·8	
	F.	—	17	23	4	42	44	—	6	217	—	5	358	23,847	66·6	
ospitals, ...	M.	—	—	—	—	23	7	—	1	—	—	—	31	1,338	43·1	
	F.	—	—	—	—	8	13	—	1	—	—	—	22	1,128	51·2	
Totals, ...		4	39	41	7	94	100	—	140	243	21	12	28	729	39,993	54·8

Age-Incidence.—Table C shows the age-incidence of patients with infections for which they were treated for the first time during the year.

TABLE C.

AGE INCIDENCE OF NEW CASES, 1933.

			-1	-5	-15	-20	-25	-35	+35
Syphilis	{	Primary, D.G. + W.R. -	—	—	—	—	13	36	25
		Primary, W.R. +, ...	—	—	—	9	49	71	42
		Secondary, ...	—	—	4	8	39	65	41
		Latent (1st Year), ...	—	—	—	3	3	6	5
		All Later Stages, ...	—	—	—	14	46	168	429
		Congenital, ...	67	28	70	38	22	24	12
		Extra Genital, ...	—	—	—	3	2	4	3
Gonorrhoea	{	Acute, ...	3	7	13	60	351	782	348
		Chronic, ...	—	3	12	114	149	238	157
Soft Chancre,		... ..	—	—	—	4	21	22	21
Non-Specific Venereal Infection,		... ..	1	4	6	55	236	425	194
Other than Venereal,		... ..	81	50	57	74	216	449	324
Totals,			152	92	162	382	1,147	2,290	1,601

Alteration in Staff Arrangements.—The work of the female clinics at Baird Street and Govan Town Hall is now undertaken by three members of the permanent medical staff of the Corporation and one part-time woman medical officer.

Treatment.—The treatment of gonorrhœa, although satisfactory in many cases, still fails to bring about a reasonably rapid cure in others. A considerable proportion, 23 per cent., of all male cases of acute gonorrhœa who were finally disposed of during the year had attended for more than six months. The reasons for this prolonged treatment are partly attributable to the patients themselves, who in many instances do not follow out the instructions given. Many patients could cut short their illness by a brief period of rest in hospital or at home during the acute stage or during a complication, but, as mentioned above, there is a considerable disinclination on the part of most patients to accept this.

During the year an alteration was made in the standard course of treatment to be given to uncomplicated early cases of

syphilis where there was no other contra-indication. The new course was adopted after prolonged consideration, and is of an intensive nature. It was put into operation in October, so that it is too early to make any pronouncement as to its results.

The following is the course given in detail:—

Day	Novarsenobillon (Grammes)	Bismuth Metal (Grames)	
1	0.45	0.2	Wassermann Reaction.
4-5	0.6	0.2	Wassermann Reaction.
8	0.6	0.2	Wassermann Reaction.
11-12	0.6	0.2	
15	0.6	0.2	
18-19	0.6	0.2	
22	0.6	0.2	
25-26	0.6	0.2	
29	0.6	0.2	
32-33	0.6	0.2	
	—	—	
	5.85	2.0	
	—	—	
(36)	0.6	0.2	In sero-negative cases
(39)	0.6	0.2	where only one course is considered necessary.

Primary Syphilis.—If the Wassermann reaction has been negative on all three occasions, one course, as above, should suffice. In cases where one course only is considered necessary, it is advisable to add two more injections, namely, on the 36th and 39th days.

If the Wassermann is positive at any time, two courses, as above, should be given, with an interval of 5-5½ weeks.

The necessity for any further arsenical treatment in primary cases will depend upon the result of these courses.

Secondary Cases.—Three courses should be given; the interval between the first and second being 5-5½ weeks, and between the second and third being 6-8 weeks. The necessity for subsequent treatment depends upon the individual case.

Wassermann Reactions.—The blood Wassermann reaction should be tested at the outset of the second and third courses, and if it is found to be positive at any point, further treatment is indicated.

In these cases of sero-negative primary syphilis where only one course of injections is indicated, the Wassermann reaction should be tested 5-6 weeks after the end of the course. (See also sub-heading, "Duration of Observation.")

Female Patients.—The scheme applies to female patients, but each dose of novarsenobillon should be reduced by 0.15 gm. The total dosage in a normal course for female patients would therefore be 4.35 gms.

Body Weight of Patient.—Where the body weight is either much under or over 11 stones., the doses can be reduced or increased, the reason for departure from the standard being recorded on the case-sheet.

Treatment with Mercury and Potassium Iodide.—Note that these drugs are not included in the scheme and should not be prescribed.

Duration of Observation.—No cases treated under this scheme should be discharged until further notice. With regard to the period of observation, three-monthly Wassermann reactions should be taken during the first two years after completion of treatment as outlined in the scheme. Thereafter the Wassermann reaction should be tested at six-monthly intervals.

Attendance of Patients and Defaulting from Treatment.—An intensive follow-up system is still in operation with regard to male cases of early syphilis, and this has brought about a continued improvement in attendance. The following shows a comparison in the attendance of male cases of acute syphilis since 1930:—

	Percentage of Cases Attending.					Approx.
	Under 3 Months.	Under 6 Months.	Under 9 Months.	Under 1 Year.	Over 1 Year.	
1930	48	22	14	8	9	100
1931	41	21	10	12	16	100
1932	42	13	17	10	18	100
1933	20	19	14	10	38	100

The following shows the amount of treatment given to dismissed cases of acute syphilis and to defaulters during the year at the "ad hoc" centres:—

Less than One Course,	...	...	...	...	64
One Course,	...	...	...	...	108
Two Courses,	...	...	...	...	109
Three Courses,	...	...	...	...	21
Four or more Courses,			...	...	5
Total,	...	...	...	...	307

Table D shows the number of defaulters and dismissals during 1933:—

TABLE D.

SHOWING NUMBER OF DEFAULTERS AND DISMISSALS DURING 1933.

	Syphilis.		Gonorrhoea.		Soft Chancre.		Non-Specific Venereal Infections.		Conditions other than Venereal.		Total.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
Number of cases which, at the commencement of the year, were under treatment or observation for, ...	1,586	1,357	837	558	22	—	89	159	16	9	2,550	2,083
Less cases from other sources, ...	138	134	191	107	29	—	29	5	8	—	395	246
Number of cases returning, ...	99	68	28	29	—	—	8	2	—	—	135	99
Number of cases in which treatment or observation commenced during the year, ...	696	653	1,632	605	68	—	513	408	927	324	3,836	1,990
Totals, ...	2,519	2,212	2,688	1,299	119	—	639	574	951	333	6,916	4,418
Number of cases which were sent to attend the Centre:—												
Before completing a course of treatment for, ...	484	365	644	71	31	—	195	98	—	—	1,354	534
After completing a course of treatment but before final tests as to cure of, ...	196	131	351	45	11	—	73	84	—	—	631	260
Number of cases transferred to other Treatment Centres or to the care of private practitioners after treatment for, ...	266	309	300	302	26	—	31	16	—	—	623	627
Number of cases discharged from the Centre after completion of treatment and observation for, ...	71	76	607	401	31	—	232	235	—	—	941	712
Number of cases in which death occurred, whatever cause, during treatment for, ...	10	6	1	—	—	—	—	1	1	2	12	9
Number of cases, which at the end of the year, were under treatment or observation for, ...	1,492	1,325	785	480	20	—	108	140	34	21	2,439	1,966
Totals, ...	2,519	2,212	2,688	1,299	119	—	639	574	35	23	6,000	4,108

Issue of Salvarsan Substitutes to Medical Practitioners.—49 medical practitioners are on the list for receiving free supplies of salvarsan substitutes for the treatment of patients in private. The total number of doses issued to these practitioners during the year was 1,736, as compared with 1,593 in the previous year.

Report of the Nurse Almoner.—The nurse almoner paid 472 domiciliary visits to patients during the year. These visits were paid to 240 patients who had defaulted from attendance at the clinic. Of these, 182 resumed attendance. Of the remaining 58, 7 were not traceable at the addresses given and 51 could not be persuaded to return for treatment. Besides these visits, the nurse almoner paid 54 special visits for other sociological purposes connected with the Venereal Diseases Scheme.

SECTION VII.

PORT LOCAL AUTHORITY.

The duties of a Port Local Authority are laid down in the Public Health (Scotland) Act, 1897, and in the Port Sanitary Regulations (Scotland), 1933, made by the Department of Health for Scotland.

Summary of Work during the Year 1933.—There arrived from foreign ports 1,404 vessels and 730 from the Irish Free State (see Table, page 120).

Of the vessels from foreign ports, 486 had come from or called at infected ports, i.e., 198 vessels between January and April from infected ports as defined by the Cholera Order, and 288 between May and December from infected ports listed as per Article II of the Port Sanitary Regulations (Scotland), 1933. Of the 486 vessels from infected ports, 159 had come direct and 327 via a home port.

The total tonnage of vessels from foreign ports was 4,014,350 tons, as compared with 3,964,268 during the year 1932.

The following table gives the number and nationality of overseas vessels with their crews arriving at the Port of Glasgow during the year 1933, compared with 1932:—

Nationality.	Number of Vessels.		Number of Crews.	
	1932.	1933.	1932.	1933.
American, ...	43	37	1,500	1,334
British, ...	1,103	1,098	69,718	69,068
Danish, ...	27	35	456	642
Danzig, ...	5	9	170	360
Dutch, ...	6	8	58	105
Esthonian, ...	—	1	—	12
Finnish, ...	27	25	597	540
German, ...	19	26	354	466
Greek, ...	4	7	110	192
Italian, ...	3	4	75	114
Japanese, ...	11	8	662	478
Jugo-Slav, ...	1	3	27	94
Latvian, ...	1	—	22	—
Lithuanian, ...	2	2	24	24
Norwegian, ...	68	74	1,291	1,375
Panamanian, ...	—	1	—	26
Roumanian, ...	1	—	29	—
Russian, ...	3	4	131	138
Spanish, ...	51	46	1,494	1,443
Swedish, ...	19	16	384	319
	1,394	1,404	77,102	76,730

NUMBER OF SHIPS ARRIVING FROM FOREIGN AND IRISH FREE STATE PORTS DURING THE YEAR 1933.

MONTH.	FROM INFECTED PORTS.						Total of A and B.			From Non-Infected Ports, direct or <i>via</i> a home port.			Total from Foreign Ports.			From Irish Free State.
	Class A (direct).			Class B (<i>via</i> a home port).												
	Ships.	Crews.	Pass.	Ships.	Crews.	Pass.	Ships.	Crews.	Pass.	Ships.	Crews.	Pass.	Ships.	Crews.	Pass.		Ships.
January,	17	820	1	29	1,711	—	46	2,531	1	75	3,190	323	121	5,721	324	60
February,	14	1,013	—	21	1,279	—	35	2,292	—	66	2,826	539	101	5,118	539	60
March, ...	22	1,058	—	37	2,542	3	59	3,600	3	68	2,863	428	127	6,463	431	59
April, ...	15	701	6	33	2,240	—	48	2,941	6	54	2,391	620	102	5,332	626	69
May, ...	8	442	—	22	1,534	51	30	1,976	51	74	4,269	1,658	104	6,245	1,709	70
June, ...	17	867	128	30	1,692	1	47	2,559	129	67	4,018	2,192	114	6,577	2,321	65
July, ...	9	472	105	25	1,724	—	34	2,196	105	75	4,744	3,523	109	6,940	3,628	76
August, ...	15	578	156	26	2,063	995	41	2,641	1,151	89	4,476	1,897	130	7,117	3,048	60
September,	8	517	115	24	1,842	—	32	2,359	115	84	5,032	1,413	116	7,391	1,528	49
October, ...	13	1,141	436	21	1,407	—	34	2,548	436	95	4,240	898	129	6,788	1,334	58
November,	9	390	6	29	1,824	—	38	2,214	6	88	3,999	841	126	6,213	847	63
December,	12	895	244	30	2,983	327	42	3,878	571	83	2,947	348	125	6,825	919	41
Totals,	159	8,894	1,197	327	22,841	1,377	486	31,735	2,574	918	44,995	14,680	1,404	76,730	17,254	730
1932,	188	12,132	716	302	19,555	65	490	31,689	781	904	45,415	21,336	1,394	77,102	22,117	730

From the foregoing table it will be observed that ships arriving direct from infected ports are considerably fewer, 159 against 188 in the previous year. On the other hand, there was an increase from 302 to 307 ships in this category coming coastwise. With regard to the nationality of ships, British numbered 1,098 in 1933, against 1,103 in the preceding year. There were fewer American, Dutch, and Italian ships, but more from Norway, Sweden, and Finland, as well as from New Zealand.

Infectious Diseases.—The total number of cases of infectious diseases and other illnesses which occurred on board vessels arriving at Glasgow was 177, compared with 252 during the preceding year. The cases dealt with at other ports numbered 73, so that 104 remaining were found on arrival at this port. There was no case coming within the group included in the Cholera, Yellow Fever, &c., Order, while 3 cases of smallpox noted were removed at other ports. Apart from the 43 cases of illnesses of a non-infectious nature, the largest group of cases dealt with was 22 of venereal disease. During the year 232 merchant service men attended the venereal disease clinic at Broomielaw for treatment. Nine cases of pneumonia were reported, 5 of whom were removed to hospital, while 11 cases of malaria were similarly dealt with.

TABLE SHOWING DISEASES AND NUMBER OF CASES DURING
THE YEAR 1933.

Disease.	Total Number of Cases.	Cases found on Arrival.	Cases dealt with in other Ports.	Cases sent to Hospital in Glasgow.	Cases sent Home.	Deaths.
Enteric Fever, ...	3	1	2	1	—	—
Diphtheria, ...	7	4	3	4	—	—
Scarlet Fever, ...	4	1	3	1	—	—
Smallpox, ...	3	—	3	—	—	—
Measles, ...	11	1	10	—	1	—
Whooping Cough, ...	3	2	1	—	2	—
Chickenpox, ...	3	2	1	—	2	—
Phthisis, ...	13	8	5	3	5	2
Venereal Disease, ...	16	13	3	1	12	—
Malaria, ...	20	13	7	11	2	1
Mumps, ...	8	3	5	—	3	—
Pneumonia, ...	9	6	3	5	1	—
Erysipelas, ...	2	—	2	—	—	—
Dysentery, ...	1	—	1	—	—	1
Influenza, ...	25	15	10	9	6	—
Tonsillitis, ...	2	2	—	—	2	—
Continued Fever, ...	1	1	—	1	—	—
Scabies, ...	1	1	—	1	—	—
Meningitis, ...	1	—	1	—	—	—
Impetigo, ...	1	—	1	—	—	—
Other Illnesses, ...	43	31	12	4	27	4
Totals, ...	177	104	73	41	63	8
1932, ...	252	117	135	26	91	22

PARROTS (PROHIBITION OF IMPORT) REGULATIONS (SCOTLAND), 1930.

Under the above regulations, 4 parrots and 3 love-birds, brought here on 5 vessels were dealt with. All of these were re-exported.

ALIENS ORDER, 1920.

During the year 1933, 56 ships with alien passengers arrived at Glasgow. The number of aliens was 2,510 non-transmigrants and 22 transmigrants. Of these, 673 were medically examined, as follows:—650 on 34 ships from U.S.A. ports, 22 on eight ships from Canada, and 1 on a ship from a European port. Three medical certificates were issued—1 for chickenpox, 1 for ptosis of left eye, and 1 for amaurosis.

RETURN OF ALIEN PASSENGERS ARRIVING IN GLASGOW DURING 1933.

Nationality.				Non- Transmigrants.	Transmigrants.	Total.
American, ...	...	...	...	2,423	3	2,426
European, ...	...	...	...	85	19	104
Asiatic, ...	...	...	...	2	—	2
				2,510	22	2,532

Emigrants.—During 1933, 112 ships carrying emigrants left the Clyde. Of these, 37 sailed for America, a decrease of 3; and 75 sailed for Canada, a decrease of 5 compared with the preceding year. Passenger ships sailing from the Clyde for Australia and New Zealand embark passengers at Liverpool.

The following is a return of emigrants and ships which left Glasgow during 1933:—

Country.				Ships.	British Subjects.	Other Nationalities.	Total.
America, ...	...	...	...	37	4,012	2,335	6,347
Canada, ...	...	...	...	75	5,585	454	6,039
Total, ...	...	...	...	112	9,597	2,789	12,386
Total, 1932, ...	...	...	...	120	11,847	3,580	15,427

PORT SANITARY REGULATIONS (SCOTLAND), 1933.

These new regulations issued by the Department of Health for Scotland became operative in May. The regulations replace the several general and special Cholera, Yellow Fever, and Plague Regulations of 1907, the Public Health (Deratisation of Ships) Regulations (Scotland), 1929, and the Public Health

(Port Administration Infectious Diseases) Regulations (Scotland), 1930. They also include provisions for carrying out obligations assumed by the Government under the International Sanitary Convention of Paris, 1926, for preventing the access of rats to ships and for the control of persons embarking in outward bound ships who are suffering from infectious disease, or who have been in such relations with persons so suffering as to render them liable to transmit the disease. The aim of the regulations is to consolidate in one code the whole of the regulations relating to the sanitary control of shipping in ports.

The general quarantine procedure prescribed in the regulations of 1907 has been modified to take account of the modern methods of international exchange of information relating to epidemic diseases. Special measures, in accordance with the provisions of the International Sanitary Convention, are prescribed for dealing with ships infected with typhus fever or smallpox in addition to those infected with plague, cholera, or yellow fever.

A circular letter calling attention to the provisions of the regulations was issued to all shipowners or agents with offices in the city on 27th April, 1933, and stating that the telegraphic address "Portelth, Glasgow," had been registered for the purpose of receiving wireless or other telegraphic information regarding the occurrence of infectious disease on board ships approaching this port.

A list of infected or suspected foreign ports arranged in alphabetical order under the various diseases is issued weekly to those interested in the administration of the regulations with the following memorandum:—

MEMO. TO OFFICERS ADMINISTERING THE PORT SANITARY REGULATIONS (SCOTLAND), 1933.

The master of a foreign-going ship arriving from foreign parts is required to ascertain the state of health of all persons on board and to complete on the prescribed form a "Declaration of Health." The declaration must be handed to the Customs Officers or the officer of the Port Sanitary Authority, whichever first boards the ship, and in the former case it is to be forwarded to the Port Sanitary Authority. Every endeavour should be made to facilitate the movements of shipping. The following "exemptions from detention" of ships have been approved by the Government and by the Customs Authorities:—

Exemption from detention in respect of ships coming within the provisions of Article 14 (1) will be *permitted* in the case of (a) a ship to which Article 14 (1) (a) applies, unless the illness

referred to is cholera, plague, yellow fever, typhus, or smallpox; and (b) a ship arriving coastwise to which Article 14 (1) (b) applies, i.e., a ship which has called at a port or seaboard included in the list referred to in Article 11, if the ship has been subjected to the "prescribed" measures at another port in Great Britain or Northern Ireland.

Free pratique will *not* be granted if the answer to any of the questions on the Declaration of Health is "YES" until the vessel has been visited by the Port Medical Officer or his designated officer.

Overleaf will be found a list of foreign ports in which it is known or suspected that certain infectious diseases have occurred during the last thirteen weeks, as set forth in the *confidential* weekly record issued by the Ministry of Health.

The following circular letter was sent to shipowners, agents, and others:—

(Circular Letter to Shipowners, Agents, and Others.)

GLASGOW PORT LOCAL AUTHORITY.

23 Montrose Street,
Glasgow, C.1, 27th April, 1933.

DEAR SIR(S),

I beg to enclose, for your information, copy of the Port Sanitary Regulations (Scotland), 1933, which are uniform with those issued by the Ministry of Health for England, and apply generally to all ports in the British Isles and Northern Ireland. These regulations amend and consolidate certain of the regulations in force for the prevention of epidemic and infectious disease. It will be observed that in accordance with the provisions of the International Sanitary Convention of Paris, 1926, special measures are prescribed for dealing with ships infected with *typhus fever or smallpox in addition to those infected with plague, cholera, or yellow fever.*

The new regulations require the Port Authority to establish, with the consent of the Customs Officer and the Harbour Master, at least one mooring station within the docks for ships which are infected or suspected, or which otherwise require to be specially dealt with to prevent the risk of spreading disease. When the prescribed mooring station or stations have been fixed, their situation will be communicated to you.

The master of a foreign-going ship (as defined in the regulations) arriving from a foreign port will require to ascertain the state of health of all persons on board and to complete a "Declaration of Health" in the prescribed form. This declaration must be handed to the Customs Officer or the officer of the Port Authority, whichever first boards the ship. Copies of the Declaration of Health are now available.

Your attention is directed to the procedure laid down in Articles 12 and 14 with regard to the duties of Customs and Officers of the Port Authority on the arrival of unhealthy ships, and to the subsequent procedure to be adopted with reference to designated mooring stations. In the great majority of cases it will be possible for such a ship to be dealt with at her ordinary berth. It is also proposed to grant standing exemptions from "detention" of ships under Article 14 in respect of certain minor diseases.

The regulations also refer to the sending of wireless messages on approaching a port by the master of any foreign-going ship fitted with a suitable wireless transmitting apparatus in order to provide the Port Authority with advance information, prior to the ship's arrival, "if any person on board has symptoms which may be indicative of infectious disease other than tuberculosis, or if there are any circumstances requiring the attention of the medical officer." It is proposed to request the Department of Health for Scotland, under Article 6, to declare that the provisions of this Article should apply to the district of the Glasgow Port Local Authority, and this approval, if obtained, will be communicated to you.

It will be observed that wireless messages, as above, from ships approaching the port are to be sent to the Port Authority either direct or through an agent approved by the Port Authority, and I shall be glad to be informed if you desire to be approved for this purpose, stating whether you are in a position to receive wireless messages during day and night.

The abbreviated telegraphic address is "PORTELTH, GLASGOW."

Yours truly,

A. S. M. MACGREGOR.

A form of Declaration of Health has been printed and issued to all ships so that masters may prepare the information on approaching the port and thus facilitate movements of the

vessels and the work of the staff. In this connection the following certificate was drawn up:—

“ TO THE PREVENTIVE OFFICER,
“ H.M. CUSTOMS HOUSE.

“ PORT SANITARY REGULATIONS (SCOTLAND), 1933.

“ THIS IS TO CERTIFY that for the purposes of the above Regulations the.....is authorised to proceed to its ordinary place of mooring, discharging or loading.

“ A. S. M. MACGREGOR,
“ *Port Medical Officer of Health.*”

RAT DESTRUCTION.

The above regulations also revoke the Public Health (Deratification of Ships) Regulations of Scotland, 1929. Article 19 of the regulations provides for the inspection of vessels for the prevalence of rats and the issue of certificates. In order to meet the convenience of shipping companies much of this work, especially where fumigation is required, is done after hours so that the vessels may be ready for loading during the normal working hours.

All vessels from plague-infected or plague-suspected ports are visited on arrival whether carrying a valid certificate or not. Rat-guards are placed on the ropes between the ship and the quay. Traps are set, and rats caught submitted for bacteriological examination. Search work is carried out by one of the assistant port sanitary inspectors and the staff of ratcatchers, and it is on the evidence of these searchers that an opinion is formed as to whether a ship should be fumigated or not. Much of the fumigation work was formerly carried out by this department by the burning of sulphur, but, with the reduction in the cost of hydro-cyanide fumigation, much of the work is now done by that method by an outside contractor. Supervision, however, is maintained by the inspectors, who satisfy themselves as to the amount of chemicals necessary, time of exposure, and the precautions to be observed during the fumigation.

The cost of supervision is defrayed by the fee charged for the certificate, which was formerly two guineas, irrespective of the size of the ship. Representation, however, was made that this flat rate was inequitable in its application to smaller ships. The Department of Health, after consultation with the Associa-

tion of Port Sanitary Authorities and the Chamber of Shipping, adopted a new scale as from 1st January, 1934:—

	£	s.	d.
Ships up to 300 tons,	0	10	6
Ships from 301 to 1,000 tons,	1	1	0
Ships from 1,001 to 3,000 tons,	2	2	0
Ships from 3,001 to 10,000 tons,	3	3	0
Ships over 10,000 tons,	4	4	0

During 1933, sulphur fumigation was carried out in 31 vessels and HCN used in 81, compared with 75 and 44 respectively during the preceding year. In 13 instances certificates were granted after trapping, and 313 exemptions were issued.

The following table summarises the results of ship deratation by SO₂, HCN, and trapping during the year, compared with the numbers for the preceding year:—

	Number of Ships Deratised.			Ex- emptions.	Number of Rats Recovered.
	By SO ₂ .	By H.CN.	By Trap- ping.		
From Infected Ports, ...	22	71	11	313	1,672
From Non-Infected Ports,	9	10	2		334
	31	81	13	313	2,006
1932,	75	44	32	300	1,617

The number of rats caught by trapping on ships not requiring certification was as follows:—Ships, 485; on docks and other premises, 328; total, 813.

The total number of rats caught by trapping on ship and on shore premises adjacent to the docks and found dead after fumigation are classified in the following table:—

Year.	Brown Rat.		Black Rat.			Total.
	Rattus Norvegicus.	Rattus Rattus.	Rattus Alexandrinus.	Rattus Frugivorus.		
1933,	178	569	787	1,285	2,819	
1932,	404	629	740	739	2,512	

Of the 2,819 rats killed, 292 were submitted to the City Bacteriologist for examination for plague bacilli, with negative result. Of the total number of rats disposed of, 1,832 were males and 987 females.

Oats said to be damaged by sulphur Fumigation.—A motor vessel was fumigated on 29th May by sulphur, which was set alight between 10 a.m. and 11 a.m., the various compartments being kept closed for six hours. The gas was released between 4 and 5 p.m. Subsequently a claim for compensation for oats which were alleged to have been destroyed by sulphur fumes released from the vessel after fumigation was received by the shipowners. The field of oats in question lay to the west of the south end of the dock, and the crop was in a comparatively early stage of growth. None of the heads of oats were showing. The

field is approximately 100 yards from the wharf side, and the fumes must have been driven over it by the easterly wind. The patch affected was irregular, and covered between a quarter and half an acre. Where the fumes had affected the growth most severely the external leaves were blighted for about 4 to 6 inches from the tips. No damage had been done to the growing point of the individual plants, and the crop was not materially affected.

NUISANCES ON SHIPBOARD.

Inspections and reinspections to the number of 2,274 of vessels in harbour were made during the year. The visits to oversea steamers numbered 1,392 and the revisits 578. In oversea sailing vessels 2 inspections were made and 2 revisits, while 247 coasting steamers and 21 sailing craft were examined, revisits being paid to 49 of the former and 14 of the latter. 160 verbal warnings were given to masters where nuisances of a minor nature were found, and 93 intimations and 7 notices (under the Public Health Act) were served where defects existed. Four hundred and fourteen verbal instructions were given and 149 notices served on masters of vessels *re* locking up of water-closet accommodation while vessels were in port.

The nuisances discovered numbered 2,328—in forecastles, rooms, &c., 749; and water-closets, wash-houses, &c., 394; while structural defects were found in 575 instances—453 within crews' quarters and 122 in water-closet and lavatory compartments. General complaints were recorded in 610 instances.

Sanitary Defects and Nuisances.—The following table shows the nuisances found on board vessels arriving in the harbour:—

ARISING FROM STRUCTURAL DEFECTS.

<i>Forecastles, Rooms, &c.—</i>	1931	1932	1933
Overhead decks leaking,	60	58	44
Ports defective,	153	150	158
Skylights out of repair,	3	2	9
Without scupper-pipe or same cemented, ...	2	2	4
Ventilators plugged, out of repair, or unshipped,	6	4	5
Without bogies or funnels, or such out of repair,	18	10	10
Inadequately lighted or ventilated,	14	6	10
Radiators or steam-pipes defective,	24	19	25
Doors to forepeak and forecastle broken, ...	8	5	2
Ship's sides leaking,	1	1	1
Anchor chain exposed by sheathing being out of repair,	1	2	3
Doors of food lockers and seats out of repair, ...	152	142	127
Requiring wood sheathing or cork-spraying for "sweat,"	5	4	2
Hawse pipes defective,	4	3	5
Floors broken and out of repair,	6	28	35
Bulkhead between forecastle and W.C. compartment broken,	3	2	2
Scuppers required,	1	—	3
Waste pipe leaking,	4	5	8
	<u>465</u>	<u>443</u>	<u>453</u>

Water-closets, Urinals, Washhouses, &c.—

Flushing apparatus, basins or discharge pipes	1931	1932	1933
defective,	28	21	27
New water-closet required,	14	15	11
Ports defective,	3	5	6
Floor and woodwork out of repair,	2	3	2
Doors broken and new locks required (w.c.'s must be locked while ship is in harbour),... ..	20	27	33
Ventilators plugged,	3	2	3
Woodwork of w.c. basin broken,	29	22	34
Compartments defective in light and ventilation,	8	7	6
	107	102	122

ARISING FROM MISUSE.

Forecastles, Rooms, &c.—

	1931	1932	1933
Alleyways and companionways dirty,	110	123	128
Floors, mat coverings, ceilings, woodwork, &c., dirty,	190	176	183
Interior of ships' sides or woodwork dirty (to be limewashed or repainted),	126	136	162
Galleys dirty,	19	15	29
Tables and benches dirty,	218	214	200
Scuppers choked (water lying stagnant),	18	25	31
Bunks dirty,	15	18	16
	696	707	749

Water-closets, Washhouses, &c.—

Floors, ceilings, and woodwork dirty,	108	97	112
Basins, hoppers, or troughs fouled, corroded, or choked,	109	110	118
Scuppers choked,	37	29	45
Wash-house dirty,	15	12	14
Interior requiring limewashing or repainting,...	84	74	97
Waste-pipe defective,	4	6	8
	357	328	394

GENERAL NUISANCES.

Food lockers dirty,	278	246	212
Bilges (hold) dirty,	66	50	53
Gear and foodstuffs stored in sleeping compart- ments,	16	17	20
Drinking-water tanks dirty and in need of re-cementing,	72	67	84
Drinking-water tanks out of repair or uncovered,	4	3	2
Accumulation of rubbish in fore-castle or on deck,	136	108	94
Fore-castle infested with vermin,	168	94	96
Bedding dirty or verminous,	137	46	48
Bilges ventilating into fore-castle,	1	—	1
	878	631	610

The following table shows the number of oversea and coastwise ships inspected in the harbour during the years 1931-1933:—

	Inspections.			Re-inspections.		
	1931	1932	1933	1931	1932	1933
Oversea Steam, ...	1,450	1,392	—	645	578	594
„ Sail, ...	1	2	2	1	1	2
Coast Steam, ...	281	231	247	55	41	49
„ Sail, ...	23	19	21	12	10	14
Intimations, ...	...	...	...	1931	1932	1933
Warnings, ...	...	...	...	126	98	93
Notices, ...	...	...	...	149	129	160
Letters to other Port Authorities, ...	...	...	...	6	5	7
				54	61	59
<i>Nuisances—</i>						
Functional, ...	...	...	...	1,053	1,035	1,143
Structural, ...	...	...	...	572	545	575
General, ...	...	...	...	878	631	610

Of the total arrivals, 1,098 were British and 306 vessels sailed under foreign flags, the latter including 17 different nationalities.

Anthrax.—Goat-skin thongs continue to be used as bindings for orange boxes from various ports in Spain. During the year samples have been examined by the Bacteriologist for the presence of anthrax bacillus. Several positive findings were obtained, and the results communicated to the Department of Health for Scotland. Samples of imported hides were also examined, with negative results.

Rags, Hair, Hides, and Bones.—The following table shows the import of rags, hair, hides, and bones, with the source of origin and number of shipments:—

Source of Origin.	No. of Ships.	Rags. Bdles.	No. of Ships.	Hair (various). Bdles.	No. of Ships.	Hides (various). Bdles.	No. of Ships.	Bones. Bags.
Europe, ...	22	309	12	278	72	36,414	—	—
Canada, ...	—	—	7	1,244	3	40	—	—
United States, ...	1	29	28	4,997	16	278	—	—
South America, ...	—	—	16	230	9	18,261	2	449
Australia & N. Zealand, ...	—	—	—	—	38	8,973	—	—
India, ...	—	—	—	—	16	1,278	5	2,089
South Africa, ...	—	—	—	—	4	203	—	—
Japan, ...	1	14	—	—	—	—	—	—
Egypt, ...	1	18	2	147	—	—	5	1,322
Straits Settlements, ...	—	—	—	—	2	5	—	—

In addition to the foregoing, there is a considerable quantity of rags imported from Irish Free State ports.

CAMEL BONES, &c.

A ship arrived at Prince's Dock on 13th May from Alexandria via Cardiff with general cargo, including 600 bags of bones, 23,086 bags of onions, and 38 bales of hide fleshings. The onions were unloaded immediately and discharging of the bones commenced on the morning of 15th May. Shortly after noon complaint was made that maggots from the bones were in the main thoroughfare. The dock at this point is 10 feet below the level of the thoroughfare and enclosed by a brick wall approximately 18 feet high, and it was against this wall the bags were stacked in tiers of four to the length of 120 feet and breadth of 12 feet. The dockway and the adjoining street were literally covered with the pests, which were actually invading the shops on the opposite side of the street and had to be kept at bay with brushes and buckets of water. Latterly it became necessary to obtain the assistance of the fire brigade to hose the insects into the dock.

The importers were instructed to have the bones removed at once, which was done by motor lorries, and while this was proceeding the surrounding areas were sprayed with disinfectant. The two infested holds in the ship were fumigated with sulphur. Instructions were given to the various importers regarding the cleaning of the bags of onions. While the movement of the cargo was under supervision, complaint was made that some of the onions had been damaged by disinfectant, but samples submitted to the City Analyst showed no evidence of contamination.

The maggots were examined and reported to be those of the beetle *Desmestes vulpinus*, or leather beetle. The full-grown larvæ leaves its food and seeks out a place where it can pupate (chrysalis stage). It has a habit of boring into anything near at hand, even into hard bones. It is carried from port to port on ships, and is found among old bones, carcasses, skins, leather goods, &c., and may do much damage. The adult beetles are not such serious pests, and are mainly scavengers.

UN SOUND FOOD REGULATIONS.

The following table shows the character and quantity of the foodstuffs imported direct during 1933 (but does not include coastwise or transhipped cargoes), a percentage of which was examined by the food inspectors before removal:—

Article.	Weight.		Article.	Weight.	
	Tons.	Cwts.		Tons.	Cwts.
Apples,	38,605	5	Liquorice,	18	3
Apricots,	210	4	Meal (various),	14,359	3
Almonds,	1,281	18	Meats (canned, etc.),	5,599	15
Bananas,	73	4	Melons,	1,070	9
Bacon,	709	9	Milk (canned),	112	4
Barley,	22,890	5	Milk (powder),	544	5
Butter,	8,198	2	Molasses,	27	10
Cereals (Oats, Rye, etc.),	91,196	—	Macaroni,	328	5
Cheese,	7,405	17	Nuts (various),	2,798	14
Coffee,	—	12	Oils (various),	10,972	1
Cocoa,	44	16	Onions,	39,402	15
Condiments,	4,028	18	Oranges,	39,696	17
Confectionery,	223	19	Orange and Lemon Peel,	61	11
Cream of Tartar,	174	14	Peaches (canned),	1,024	2
Eggs,	75,805	2	Pears,	2,262	—
Eggs (liquid),	753	7	Pears (canned and dried),	2,245	—
Eggs (albumen),	717	6	Pineapple,	2,021	3
Fish (canned, etc.),	1,083	8	Plums (canned and dried),	536	17
Fruits (canned),	3,558	—	Pomegranates,	631	13
Fruits (dried),	8,695	7	Potatoes,	1,236	13
Fruit (pulp),	660	16	Peas,	13,179	18
Flour (various),	109,711	—	Rice,	6,664	6
Farinaceous Foods,	1,422	7	Sundries,	3,688	3
Glucose,	2,307	5	Sugar,	3,828	6
Grapes,	3,934	4	Syrup,	91	14
Grape-Fruit,	1,567	17	Tomatoes,	45	13
Hams,	5,132	13	Tomatoes (canned),	1,100	17
Honey,	64	1	Vegetables (canned),	736	7
Lard,	3,165	2	Wheat,	182,999	10
Lemons,	5,872	—			

Total weight, 736,776 tons 12 cwts.

The following foodstuffs were found unfit and disposed of to the satisfaction of the Medical Officer of Health:—

Article.	Weight.		Article.	Weight.	
	Cwts.	Qrs.		Cwts.	Qrs.
Apples,	17	1	Grape-Fruit,	32	—
Almonds,	1	1	Ginger (dry),	4	—
Beer,	545	3	Meats (canned),	7	2
Barley,	760	—	Maize,	440	—
Desiccated Coconut,	1	1	Oranges,	2,511	—
Egg-liquid (frozen),	1	—	Onions,	3	—
Flour,	319	—	Peas,	4	2
Fruits (canned),	1	2	Pigs' Heads,	339	2
Grapes,	4	3			

Total weight, 4,993 cwts. 1 qr.

The foregoing table shows the great variety of the foodstuffs inspected and dealt with. The method of procedure in each case is similar. The suspected foodstuffs are detained for further inspection, the consignee is communicated with, and a suitable time arranged for the re-examination of the material. As a rule the consignees, on being satisfied as to the unsoundness of the food, are amenable to reason and empower the inspector to have the condemned food disposed of, thereby obviating the necessity for obtaining a warrant from the Sheriff or Magistrate. Much time is often taken up in examining and supervising the reconditioning of consignments. The following are examples of this:—

Damaged Barley and Maize.—A vessel arrived from Braila with a full cargo of grain, comprised of barley and maize. While discharging at Meadowside Wharf the ship was rammed by a vessel which broke away from her tugs owing to the towing hawser breaking. The principal damage sustained was in the region of the bunker hatches, where several plates were "started" and serious leakage caused. As a result of this leakage a considerable quantity of barley and maize was damaged by river water and removed from the ships' hold in a sodden condition. The damaged grain was detained, and samples found to be unfit for human consumption. The approximate weight of the condemned material was:—

Barley, ...	...	...	...	...	...	...	38 tons.
Maize, ...	...	...	...	...	...	...	22 tons.

Pigs' Heads in Brine.—During August, 1932, a consignment of 75 tierces of pigs' heads, marked "M.A.N.," was deposited at Springfield Quay, from Denmark via Leith, to await shipment to Limerick. The consignment was properly certificated in conformity with the Imported Food Regulations. In October the consignment had not been exported owing to some difficulty regarding the payment of Customs duty in the Irish Free State.

It was feared that, with the evaporation of the brine, deterioration of the condition of the pigs' heads might arise. Examination was made of several tierces during the period from November to March, but there seemed to be no serious change in the condition of the heads. The brine had evaporated in some instances and the meat had suffered slightly in consequence, but not sufficiently to demand a wholesale examination. On 24th March, 1933, it was learned that 47 tierces, with a further 22 shipped back from Limerick, had been sold earlier in the week to chemical manufacturers. Twenty-eight had also been sold to a firm of oil and grease merchants. It was requested that guarantees be furnished regarding the disposal of the heads. In each instance, assurance was given that the meat was being rendered into grease for inedible purposes.

Canned Lobster.—On 27th June, two samples of canned lobster were reported by the City Analyst to contain:—

Tin, ...	...	...	...	...	0.49 grains per lb.
Arsenic, ...	...	...	...	...	6.0 parts per million.
Lead, ...	...	...	...	...	46.9 " "

The consignment, consisting of three small cases, had been disposed of in small lots, and it was almost impossible to trace them as this class of material is usually consumed immediately. The Analyst's report stated that arsenic, lead and copper are present naturally in relatively large amount in crustaceans and shellfish, that there is no definite standard laid down to govern crustacea or shellfish, and that lead had been found in previous cases as high as 25 parts per million and arsenic had also been found in relatively large amounts. In view of the lack of a standard and the natural presence of the metallic impurities in crustaceans and shellfish, it is very difficult to state when an excess of any or either exist; and the only line of action open is to draw the attention of the importers to the large amount of lead present in sample as taken from their consignment.

Further samples were taken from a second consignment, of the same mark, brand and importer. In this instance the Analyst's report showed the presence of:—

Tin, ...	...	...	...	...	0.55 grains per lb.
Arsenic, ...	...	...	...	...	3.8 parts per million.
Lead ...	...	...	...	...	12.6 " "

The proportion of lead, while much lower than the quantity previously reported was still in excess of any amount hitherto recorded, but the arsenic content was well within the amounts recorded as being natural to lobster. The importers in Liverpool were informed and it was suggested that they should take up the matter with the packers in Canada. The case was also reported to the Department of Health.

Ox Tongue.—A vessel arriving from Valparaiso on 20th July had a consignment of ox tongue which had to be completely examined owing to the unsatisfactory state of some of the tins. Permission was given to remove the meat to a store where it was detained until the importer issued instructions regarding examination. Two "blown" tins were found, while a large number showed evidence of inefficient sterilization, the ends of the tins being blistered and not thoroughly collapsed. A loss of vacuum was feared as the tins were of crude construction and were heavily soldered at the joints. Two tins were removed and were submitted to the City Analyst and Bacteriologist for examination and report, which was as follows:—"On opening the tin foul smelling gas escaped. The exposed surface of the meat was wet and slimy and emitted a strong putrefactive odour. The fibres of the surface meat were soft, wet and friable, showing signs of decomposition. From its odour and appearance this sample of canned tongue is unfit for human consumption."

Bacteriological examination.—Surface examination: *B. proteus* present in large numbers. A spore-bearing proteolytic anaerobe also isolated.

This consignment caused much trouble and difficulty.

In the end 92 six-pound tins were condemned from a consignment of 240 (38.4 per cent. of the consignment).

On 28th September, Certificates of Condemnation were placed with the Customs Officer and he was advised that an officer of the Port Local Authority would pierce each tin. As an additional safeguard, an application of cyllin would also be made after each tin had been opened. No objection to this course of action was made and the work was duly carried out on the same day.

A second consignment from Chile arrived later, these being the first consignments of canned ox-tongue from Chile to this port. The tin containers are of poor workmanship, being heavily soldered, top and bottom, with a rather weak-looking joint on the cylindrical part of the tin. They are painted white externally and are coated with varnish internally, but do not give much confidence in their ability to stand any changes of temperature. There is no certification of meat products from Chile, though the importer stated that he held some form of exportation certificate issued by the government of that country.

PUBLIC HEALTH (PRESERVATIVES &c., IN FOOD) REGULATIONS (SCOTLAND), 1925.

The above regulations apply to all imported articles of food-stuffs except where these are intended for re-export or for use as ship's stores:—

Cream.—Fairly large consignments of cream arrive from the North of Ireland and Irish Free State ports. During the year 47 samples of cream were examined by the City Analyst, who reported the presence of boron preservatives in two instances.

Arsenic in Apples.—Of 35 samples of various brands of apples, 15 were reported as containing no arsenic. The remaining twenty samples contained arsenic within the prescribed limit. Seventeen of the samples were taken from apples landed here from North American ports, and 18 were from Australasian and Canadian ports. Of the 18 samples taken from these latter ports, the arsenic found was well within the limit. It was not considered necessary to condemn any of the fruit.

Boric Acid in Oranges.—Ten samples of oranges were taken during the year and submitted to the City Analyst who reported the presence of boron preservatives in all samples in small quantities ranging from 0.001 to 0.018 of a grain per lb. The evidence indicates that some attempt to preserve the fruit by dipping in boron solution is being adopted, but in view of the fact that the quantity indicated is naturally present in citrous fruits an obvious difficulty arises in any attempt to determine the amount of boron which might be regarded as having been added to the fruit by the process of treatment. Samples of grape-fruit were also submitted and found to contain boron compounds in varying degrees from 0.004 to 0.021.

FOODSTUFFS EXAMINED.

During the year foodstuffs were sampled and submitted to the City Analyst, who reported as follows:—

Article.	Samples Reported.		Notes on Defective Samples.
	Fit for Human Consumption.	Unfit for Human Consumption or not in conformity with Regulations.	
Almonds,	2	4	Damaged by sulphuric oil. 1½ cwts. condemned.
Apples,	35	—	
Barley,	1	3	Damaged by river water. 760 cwts. condemned.
Beer,	—	10	Soured and flat. 6,112 gallons destroyed.
Butter,	13	—	
Cereals (Grape Nuts, etc.),	2	—	
Coffee and Coffee Substitute,	1	—	
Cheese,	7	—	
Confectionery,	5	—	
Cream,	45	2	Contained boron preservative.
Citric Acid,	1	—	
Cream of Tartar,	8	—	
Desiccated Cocoanut,	5	1	Contaminated with river water. 1½ cwts. condemned.
Egg Yolk (liquid),	4	1	Defrosted and decomposed. 1 cwt. destroyed.
Egg Albumen,	1	—	
Egg Whole,	2	—	
Fats (various),	7	—	
Fish (canned, etc.),	15	2	Canned lobster. Contained an excess of lead and arsenic.
Flour (various),	2	—	
Fruits (canned),	30	1	Burst and blown. ½ cwt. canned oranges condemned.
Fruits (dried),	45	—	
Fruit Pulp,	2	—	
Glucose,	1	—	
Grape-Fruit,	2	—	
Ginger (wet and dry),	2	—	
Honey,	3	—	
Lard,	9	—	
Lemon Juice,	—	1	Contained an excess of SO ₂ .
Maize,	—	3	Damaged by river water. 440 cwts. condemned.
Margarine,	1	—	
Meats (canned, etc.),	24	2	Broken down through imperfect sterilization. 5 cwts. condemned.

Article.	Samples Reported.		Notes on Defective Samples.
	Fit for Human Consumption.	Unfit for Human Consumption or not in conformity with Regulations.	
Milks (canned), ...	2	—	
Milks (dried), ...	3	—	
Mineral Waters, ...	1	—	
Oils, ...	14	—	
Onions, ...	1	—	
Oranges, ...	10	1	Affected with "sooty mould." 210 cwts. condemned.
Oysters, ...	1	—	
Peas, ...	1	—	
Peel in Brine, ...	3	—	
Pork and Beans, ...	4	—	
Salt, ...	2	—	
Sauces, ...	5	—	
Soups (canned), ...	5	—	
Sugar, ...	5	—	
Syrup, ...	3	—	
Tartaric Acid, ...	1	—	
Tea, ...	14	—	
Tomatoes (canned), ...	10	—	
Vegetables (canned), ...	3	—	
Water, ...	1	2	Water from ship's tanks. Tanks emptied and cleansed.
Wines, ...	2	—	

FOREIGN MEAT REGULATIONS.

The following statement, compiled from information supplied by the Corporation Veterinary Surgeon, indicates the work done under the Foreign Meat Regulations:—

EXAMINED.

BEEF (<i>Fresh Meat</i>)—				PORK—			
Quarters, ...	...	27,270		Carcases, ...	...	51,106	
Boxes, ...	...	5,827		Sides, ...	...	6,041	
Bags, ...	...	319,117		Cuts, ...	...	275	
Cuts, ...	...	2,391		Bags, ...	...	25	
(<i>Salt Meat</i>)—				(<i>Salt Meat</i>)—			
Mess Beef (barrels), ...	...	265		Mess Pork (barrels), ...	...	330	
Mess Beef (tierces), ...	...	200					
VEAL—				BACON AND HAMs—			
Sides, ...	...	1,191		Pork Hams (boxes), ...	...	4,555	
Bags, ...	...	8,957		Bacon (bags), ...	...	11,663	
MUTTON AND LAMB—				Pork Hams, ...	...	100	
Carcases, ...	...	142,908					
Cuts, ...	...	312					

EXAMINED—*continued*.

Ox Tongues (boxes),	...	125	Pork Loins (cases),	...	5,385
Ox Tongues (bags),	...	837	Pork Loins (bags),	...	1,000
Ox Tails (bags),	...	222	Pork Shoulders (boxes),	...	22
Ox Cheeks (boxes),	...	100	Pig Livers (tierces),	...	25
Ox Cheeks (bags),	...	20	Pig Kidneys (boxes),	...	102
Ox Livers (cases),	...	1,354	Pig Casings (tierces),	...	17
Ox Livers (bags),	...	4,963	Sheep Livers (crates),	...	20
Ox Hearts (bags),	...	65	Sheep Hearts (bags),	...	30
Ox Hearts (boxes),	...	5	Sheep Kidneys (cases),	...	250
Ox Tripe (boxes),	...	4,900	Lamb Livers (crates),	...	420
Ox Tripe, (bags),	...	3,599	Lamb Hearts (bags),	...	5
Ox Sweetbreads (bags),	...	281	Lamb Sweetbreads (boxes),	...	205
Ox Kidneys (bags),	...	1,116	Casings (casks),	...	89
Ox Kidneys (boxes),	...	357	Caul Fat (boxes),	...	1,462
Ox Skirts (bags),	...	3	Turkeys (boxes),	...	500

DESTROYED.

BEEF (bags),	...	...	440½	VEAL (bags),	...	...	1
BEEF (quarters),	...	...	26	OX LIVERS (bags),	...	...	2
BEEF (cuts),	...	...	7	OX KIDNEYS (bags),	...	...	1
LAMBS (carcases),	...	...	1	OX TRIPE (boxes),	...	...	1

SECTION VIII.

HOUSING.

SECTION I.—GENERAL.

The present position of housing in Glasgow formed the basis of the following report by the Medical Officer of Health submitted on behalf of the Corporation to the Government Committee on Scottish Health Services. The evidence was confined to the relation between housing conditions and health and the extent to which bad housing (including overcrowding and shortage of houses) contributes to ill-health and has to be taken into account in framing health policy. Questions of rent, finance, subsidy, &c., were not dealt with as they were outwith the remit to the committee.

GENERAL CONSIDERATIONS.

Public health policy in Glasgow has been, and must, for a number of reasons, continue to be closely related to housing conditions. Some of these have been referred to under the heading of general sanitation. The more urgent practical problems centre round the uninhabitable house and the small overcrowded house. Again, an important factor is the preponderance of houses of one and two apartments, which entails a vigilant sanitary and public health administration, and necessitates a relatively large provision of hospital accommodation for the treatment of sickness, especially the infectious diseases. Generally speaking, it will require a long-continued and sustained effort to apply the principles of modern hygiene to the housing conditions of a large section of the population.

The association between bad housing conditions and health is well recognised. Overcrowding influences the incidence of infectious diseases such as measles, whooping-cough, cerebro-spinal fever, tuberculosis, &c. For instance, measles spreads rapidly among children in congested tenement houses, and is serious in proportion to the youth of the children who contract the disease. The majority of the children in better residential

areas escape the infection until they reach school age. The occupants of small houses succumb more readily to pulmonary tuberculosis; comparing the single-apartment houses with those of larger size, the incidence in the former is twice as great and the death-rate four times as great. As regards diseases of the respiratory system (pneumonia, &c.) and the infectious diseases of childhood, there is an inverse ratio between the death-rates and the size of the house. Briefly, those infections whose mode of spread is direct from person to person by means of "droplet" infection tend to be more common and more severe in small overcrowded and congested dwellings. At the same time, it is recognised that other factors enter into the question, and that poverty generally and a lower standard of life must play a part in determining the higher incidence of disease under these circumstances.

These general considerations, illustrative of the conditions leading to concentration of certain common infections which mostly affect children, do not minimise the significance of the fact that the recent very great reduction in mortality has been most apparent at ages between one and five years. As regards the question whether and to what extent a coincident improvement in the general health and a lessened morbidity have occurred, comprehensive statistical evidence is not available, but the records of school medical inspection furnish undoubted evidence of the gradual attainment, by school children of all classes of the population, of a higher average standard of physical condition and of greater freedom from preventable defects and ailments.

It may be concluded that housing conditions largely determine sanitary and public health policy, administration, and expenditure, and that the promotion of the health of children should be the guiding principle in housing operations. Environmental changes of a kind favourable to the promotion of health are being rapidly advanced by (a) modern housing standards and lay-out of housing schemes, and the adoption of town planning principles, associated with the demand for and provision of greater facilities for open air recreation, and by (b) the effect of the falling birth-rate on the average standard of occupancy of houses. It is important to take note of these two movements in relation to health policy.

HOUSING DEVELOPMENT.

With regard to new construction of houses undertaken by the Corporation to meet (a) the normal growth of the population, (b) overcrowding, and (c) slum clearance, the following table

gives the position as at November, 1933, from information supplied by the Director of Housing:—

NUMBER OF HOUSES ERECTED OR UNDER CONSTRUCTION BY THE CORPORATION AS AT 30TH NOVEMBER, 1933.

Houses completed under—	Completed	Under Construction.	Total.
1919 Act,	4,896	—	4,896
1923 Act,	2,052	—	2,052
1924 Act (Ordinary),	12,613	1,366	13,979
1924 Act (" Intermediate "),	5,484	2,173	7,657
House Purchase Schemes,	662	—	662
Rehousing Schemes (1923 Act),	6,294	252	6,546
Rehousing Schemes (1930 Act),	952	2,014	2,966
Totals,	32,953	5,805	38,758

Under the projected Five Year Plan, it is proposed to erect 8,000 houses to replace uninhabitable houses and 12,000 to relieve overcrowding in small houses.

The type and size of house erected for the foregoing purposes are set out as follows:—

CORPORATION HOUSING DEPARTMENT.—STATEMENT OF PROGRESS IN HOUSING SCHEMES AS AT 30TH NOVEMBER, 1933.

One-apartment (hostel),	33
Two-apartment houses in tenements,	3,462
" " flats,	268
	3,730
Three-apartment houses in tenements,	8,969
" " flats,	9,892
" " cottages,	2,288
	21,149
Four-apartment houses in tenements,	1,644
" " flats,	1,668
" " cottages,	3,750
	7,062
Five-apartment houses in cottages,	979
	32,953

In the following Table is shown the number of houses for which linings were granted by the Dean of Guild Court during the periods 1900-1914 and 1919-1933:—

PERIOD 1900 TO 1914.

Year ended	Number of Apartments.						
31st Aug.	One.	Two.	Three.	Four.	Five.	Six.	Total.
1900, ...	500	1,206	414	200	101	115	2,536
1901, ...	377	1,124	554	123	92	176	2,446
1902, ...	611	2,420	1,527	292	143	356	5,349
1903, ...	765	2,117	1,203	341	125	286	4,837
1904, ...	338	1,656	526	180	131	63	2,894
1905, ...	260	1,135	369	72	107	142	2,085
1906, ...	505	1,683	368	123	57	127	2,863
1907, ...	195	610	440	68	64	65	1,442
1908, ...	47	579	295	143	36	28	1,128
1909, ...	32	554	321	57	120	83	1,167
1910, ...	94	544	426	108	34	77	1,283
1911, ...	54	161	41	10	12	6	284
1912, ...	6	120	53	13	6	2	200
1913, ...	1	97	195	71	67	30	461
1914, ...	15	108	116	25	46	63	373
<hr/>							
	3,800	14,114	6,848	1,826	1,141	1,619	29,348
<hr/>							
	13.0	48.1	23.3	6.2	3.9	5.5	100.00

PERIOD 1919 TO 1933.

Year ended	Number of Apartments.						
31st Aug.	One.	Two.	Three.	Four.	Five.	Six.	Total.
1919, ...	—	—	144	78	—	—	222
1920, ...	—	12	1,239	414	214	57	1,936
1921, ...	—	—	1,176	981	240	34	2,431
1922, ...	—	—	65	99	39	31	234
1923, ...	—	680	286	205	104	46	1,321
1924, ...	—	357	991	605	745	82	2,780
1925, ...	—	504	674	111	44	61	1,394
1926, ...	—	318	4,649	967	769	93	6,796
1927, ...	—	228	2,889	1,209	802	55	5,183
1928, ...	—	132	4,184	2,238	314	17	6,885
1929, ...	—	570	1,656	1,024	124	82	3,456
1930, ...	—	506	1,958	1,295	230	202	4,191
1931, ...	—	122	2,220	1,900	38	26	4,306
1932, ...	33	529	3,464	1,251	70	4	5,351
1933, ...	—	270	1,845	3,162	337	23	5,637
<hr/>							
	33	4,228	27,440	15,539	4,070	813	52,123
<hr/>							
	0.1	8.1	52.6	29.8	7.8	1.6	100.0

In the pre-war period building was wholly by private enterprise; the numbers for the post-war period include houses provided both by the Corporation and by private enterprise. The percentage figures illustrate the upward movement in housing programmes. In the first period the proportion of one-apartment houses was no less than 13 per cent., compared with 0.1 per cent. in the second period; two-apartment houses, 48 per cent., com-

pared with 8 per cent.; three-apartment houses, 23 per cent., compared with 53 per cent.; and four-apartment houses, 6·2 per cent., compared with almost 30 per cent.

The number of houses produced by private enterprise during the post-war period may be estimated at approximately 20,000, as against some 33,000 erected by the Corporation. Taking the average occupancy at four persons per house, the total is equivalent to a population of approximately 200,000 persons, a figure which does not include Glasgow citizens who have migrated to housing schemes beyond the city boundary, a number which is unknown but considerable.

It may be pointed out that the room-and-kitchen houses have been erected as part of the scheme for rehousing families dispossessed from insanitary houses after closure or demolition, and that otherwise no houses of less than two rooms and kitchen have been provided with the exception of hostel provision. This is in accordance with a definite policy based upon consideration of the large proportion of houses of smaller size which already exist in the city. These proceedings have had important public health results, because this housing development has taken place, for the most part, in virgin areas, permitting a lay-out of reasonably low density, provision where possible of open spaces, and the erection of modern schools on open-air principles. There are, for instance, 41 school buildings (ordinary and special) of open-air design, and 21 schools, some portion of which have been so erected within recent years.

The orderly planning of the undeveloped areas of the city is controlled by four Town Planning Schemes, which have been completed under the Town Planning (Scotland) Act, 1925, extending to 21,671 acres. Large areas contiguous to the city are being planned by the respective counties, in collaboration with each other and with the Corporation. A corresponding Act for the control of built-up areas came into operation last year. These provisions are of the utmost importance, because they enable modern principles of hygiene to be applied in practice to a town and its environs, particularly as regards density of houses and the provision, wherever possible, of open spaces, playgrounds, and playing fields.

In connection with the replanning of cleared areas under the Housing Acts, it is seldom possible to rebuild the cleared site so as to accommodate more than one quarter of the displaced inhabitants. For instance, in the Calton Scheme, 1,300 houses were demolished and replaced by 330, in the form of three-storey tenements. This arises from the extreme congestion which exists in the original area, and which forms one of the principal reasons for condemnation.

OCCUPANCY OF HOUSES.

Housing activity, combined with the falling birth-rate, is responsible for changes in the occupancy of houses in general, which have an important bearing on housing and health.

(a) *Average Number of Occupants per House and per Room.*—This has undergone a gradual diminution, the extent of which will be apparent from the following table:—

NUMBER OF PERSONS PER HOUSE AND PER ROOM AT CENSUSES
AS UNDER :—

Date of Census,	1881	1891	1901	1911	1921	1931
No. of persons per house, ...	4.74	4.73	4.77	4.66	4.44	4.11
„ „ room, ...	2.04	2.03	1.85	1.83	1.77	1.54

The reductions in the average number of persons per house and per room which have taken place since the beginning of the century are due to (a) natural causes, and (b) housing activity in more recent years, which have resulted in an increase in the average number of rooms per house. As regards the first-mentioned factor, the natural increase of the population (*i.e.*, excess of births over deaths) which had remained round about 11 per thousand in the period following the 'seventies of last century, has since fallen to 6 per thousand owing to the continued fall in the birth-rate. For instance, between 1921 and 1931, while the death-rate remained stabilised round about 15 per thousand persons living, the birth-rate fell from 27.6 to 20.8 per thousand persons living. As regards the second factor, the increase in the average number of rooms per house since 1921, combined with the fall in the number of persons per family, accounts for the lower figure of 1931.

(b) *Influence of Housing.*—The influence of this factor is illustrated in the following table showing the changes which have taken place in the relative proportion of houses of various sizes, as shown by the Valuation Roll:—

OCCUPIED HOUSES, 1921 AND 1931, ARRANGED ACCORDING TO
NUMBER OF APARTMENTS.

1 apartment,	43,753	18.6	} 66.4	38,756	14.8	} 58.5
2 apartments,	112,688	47.8		114,015	43.7	
3 „	44,594	18.9	} 25.3	61,964	23.7	} 32.8
4 „	15,111	6.4		23,701	9.1	
5 „ and up,	19,391	8.3		22,743	8.7	
Totals,	235,537	100.0		261,179	100.0	

Thus, of the total houses occupied in 1921, over 66 per cent. were of one and two apartments, and 25 per cent. of three and four apartments. The corresponding proportions are now 58 and 33 per cent. respectively. For this result the building programme of the Corporation is mostly responsible. These figures serve to illustrate the magnitude of the housing problem, particularly as regards the elimination of overcrowding caused by the preponderance of small houses.

(c) *Occupancy of Houses of different size.*—The following table carries the inquiry as to the occupancy of houses into the different sizes of house of which the city is composed :—

COMPARISON OF NUMBER OF PERSONS PER ROOM AT VARIOUS PERIODS, ACCORDING TO SIZE OF HOUSE.

Size of House.				1891.	1901.	1911.	1921.	1931.
All sizes,	...	...	...	2.033	1.846	1.827	1.766	1.536
1-apartment,	...	...	...	3.232	3.183	3.196	3.248	3.102
2-apartments,	...	...	...	2.475	2.463	2.432	2.361	2.093
3-	„	...	...	1.839	1.803	1.734	1.581	1.454
4-	„	...	...	1.407	1.332	1.254	1.135	1.098
5-	„	and up,	...	0.882	0.787	0.761	0.679	0.680

Until 1911, except in houses of four apartments and over, there was little evidence of reduction in the number of persons per room. All groups, however, show improvement since that date other than the one-apartment houses. The tendency among many families is to remain in the single apartment, notwithstanding increase in the number of the family and the passage of infants through childhood to adult ages. It is probably among this group also that the fall in the birth-rate has been least marked.

The social and public health significance of these movements is apparent. On the one hand, the falling birth-rate is reducing the size of the average modern family. On the other hand, housing progress is tending to redress the adverse balance of small houses in the city. These two movements are complementary, and their general effect will be to bring overcrowding within more manageable dimensions.

It is in the small houses that the problems relating to public health mainly arise. Many of them have no separate water-closet accommodation and, generally speaking, the majority are devoid of ordinary sanitary conveniences. For example, in the total number of 263,321 occupied houses in Glasgow at the end

of 1932, the approximate number with fixed baths was under 90,000. At the same date, over 105,000 households used a water-closet in common with others, *e.g.*, 5,873 water-closets served two households, 18,303 served three households, 7,360 served four households, and 1,769 served five or more households. Thus, nearly 40 per cent. of the population used a water-closet in common with members of another household. The ideal to be aimed at should, of course, be a water-closet and bath for each family.

THE PRESENT POSITION.

The high proportions of houses in the city of one and two-apartments give rise to a variety of health problems. The following table contrasts certain cities in Scotland and England in respect of size of house:—

PERCENTAGE OF HOUSES OF DIFFERENT SIZES (CENSUS 1931).

		1 apt.	2 apts.	3 apts.	4 apts.	5 apts and up.	Total.
Glasgow, ...	...	14·8	43·7	23·7	9·1	8·7	100·0
Edinburgh, ...	...	6·7	31·8	25·5	14·8	21·2	100·0
Birmingham, ...	...	0·2	1·1	17·1	19·8	61·8	100·0
Liverpool, ...	...	0·3	2·7	9·7	21·8	65·5	100·0
Manchester, ...	...	0·2	1·7	10·0	40·0	48·1	100·0

Thus, in Glasgow 58 per cent. of the houses consist of one and two rooms, while in Birmingham over 60 per cent. contain five or more apartments.

The two main housing problems are concerned with (*a*) the small overcrowded house, and (*b*) the insanitary or unfit house. These are distinct problems although they are often regarded as associated, as in the Housing Act of 1930, where the provisions to deal with overcrowding are contingent upon the presence of unfit houses in the improvement area to be dealt with under the Act. The incidence of overcrowding is general and not local. Procedure against the unfit house means the provision of alternative accommodation, and does not add to the total number of houses available. Procedure to relieve overcrowding implies the provision of new houses at rentals within the capacity of the lower-paid working classes to afford. It is not intended to enter into the financial and other difficulties surrounding this problem, the solution of which is a vital public health question.

OVERCROWDING.

There are, in the city, 38,756 houses of one apartment (14·8 per cent. of the total houses), and 114,015 of two apartments (43·7 per cent. of the total). Of the one-apartment houses, 12,931 or 34·7 per cent. are occupied in excess of a standard of three persons per house, while 15,042, or 13·5 per cent. of the

room-and-kitchen houses are so occupied. The following table affords a measure of the volume of overcrowding as at the 1931 census. The table gives the houses occupied in excess of three persons per room and their population, along with the relative numbers in the city to which the standard applies.

NUMBER AND PERCENTAGE OF HOUSES OCCUPIED BY MORE THAN THREE PERSONS PER ROOM AND POPULATION.

			No. of Houses occupied more than 3 per room.	Population occupying these Houses.	Percentage of Houses occupied more than 3 per room.	Percentage of Population living more than 3 per room.
1 apartment,	...	...	12,931	64,858	34.7	56.2
2 apartments,	...	...	15,042	119,535	13.5	25.6
3 "	...	...	1,336	14,348	2.2	5.4
4 "	...	...	58	801	0.3	0.8
5 "	...	...	4	72	—	—
			29,371	199,614	11.5	19.0

The first column in the table, *i.e.*, number of houses containing more than three persons per room, may be compared with similar data taken from the 1921 census as follows:—One-apartment houses, 14,131; two apartments, 21,239; three apartments, 4,268; over three apartments, 284; total, 39,922 houses. This represents a reduction by one quarter in the number of houses so occupied, as compared with the figure of 1921, ten years previously. The movements which are causing these reductions in the average occupancy of houses are having least influence on the smallest type of dwelling.

While the table represents the gross data, the actual housing requirements to relieve overcrowding would be considerably less, as by redistribution and decantation many of those families could be properly accommodated. It should also be pointed out that the standard on which the table is constructed is not a high one.

The incidence of overcrowding falls most heavily upon the single-apartment house, in respect of which the data revealed by successive censuses show that there has been but little improvement. It is felt that some measure of control of the occupancy of these houses is desirable, and consideration is being given to the advisability of obtaining power to prevent such a house, on being vacated, from being occupied by other than a single person or by a family containing a stated number of persons. Provision of new houses will not alone solve the problem of overcrowding unless some control is exercised over the occupancy of the smaller type of house.

In 1927 the erection of houses of three and four apartments, chiefly in three-storey tenements, was begun for the specific purpose of relieving overcrowding. So far, 5,484 have been completed, and 2,173 are under construction. They are let at a uniform figure of 10s. 6d. and 12s. per week respectively, inclusive of occupier's rates, and are restricted to families with incomes up to £4 a week for four persons, adding 5s. for each additional child up to £5 as the maximum limit of income. These houses have been found to be most useful and popular, and of real public health value, because of the direct relief they afford to the occupants of smaller houses from whom the great majority of the tenants are recruited. Taking, however, the test of rental, it is clear that the scale is not low enough to place these houses within the reach of the lower-paid wage earning class.

SLUM CLEARANCE AND REHOUSING.

Under local schemes for the closure and demolition of unfit houses, singly or by means of clearance areas or as dangerous buildings, 10,260 families have been dispossessed since operations began in 1923; 7,246 houses in rehousing schemes are occupied by transferred tenants, and 2,266 are under construction. It is estimated that approximately 12,000 houses remain to be dealt with, a number likely to be increased in the future. The health aspects of re-housing will be apparent from the tables given in Appendices VI and VII, which contrast the vital statistics of certain larger areas which have been demolished with those of a considerable re-housing scheme at Hamiltonhill, containing 728 houses and 3,712 inhabitants. The tables compare certain slum areas with a re-housing scheme, and show that, over a period of five years, the latter had a lower general death-rate and lower rates for respiratory diseases, pulmonary tuberculosis, and infant mortality. These rates are definitely lower than the corresponding rates for the slum areas, but are slightly in excess of the general city rates.

In connection with re-housing of dispossessed families, two questions have emerged—(1) It is inevitable that, in the course of re-housing, certain families prefer to find other accommodation, and that a number are transferred who would prove to be unsatisfactory under any circumstances. The principle adopted is to offer a new house to all families dispossessed, an offer which some 75-80 per cent. accept. Of those who are transferred, it may be computed that about 10 per cent. belong to a difficult or incorrigible type, composed of those who become weary of making an effort and return to the slums, and of others who are evicted for one reason or another. The proportion who fall into

this class is difficult to estimate, but is not large. The general civic problem created by the difficult or unsocial tenant may require special attention at some later date.

(2) It has been found essential to watch the progress of individual families in these schemes. Management involves something more than the collection of rents and attention to repairs, and implies attention to human and social needs. As the result of experience and observation over the past few years, it may be affirmed that the majority of tenants do respond to efforts made to improve their environment, but the extent of the response depends on the degree of wise and helpful aid rendered by appropriate officers of the local authority. In Glasgow there is for this purpose a system of close co-operation between the Public Health Department and the City Improvements Department, which is responsible for the management of the new schemes. The former has undertaken, through specially delegated lady inspectors, the function of routine inspection, assistance, advice, and general supervision, exercised in a variety of ways, for the purpose of maintaining standards of occupancy at the highest possible level.

A variety of difficulties arise, due to ill-health, ingrained habits, indifference, lack of knowledge, &c., and the guidance of trained nurses has been found to be beneficial from a health and social point of view. The system adopted has passed beyond the experimental stage, and has become a valuable measure in the interests of public health.

GENERAL OBSERVATIONS AND CONCLUSIONS.

(1) The preponderance of small houses of one and two apartments, together comprising 58 per cent. of the total, requires a vigilant sanitary and public health administration, and necessitates a relatively large provision of hospital accommodation for the treatment of sickness, especially the infectious diseases.

(2) In future developments, the utmost value attaches to (a) town-planning schemes, which will enable densities to be controlled, amenities preserved, and open spaces provided, and to (b) encouragement of the modern demand for open-air play and recreation by all classes.

(3) The principal aim in housing reform should be the promotion of the health of children, owing to the readiness with which they respond to environmental influences.

(4) Under the influence of housing development and the continuing fall in the birth-rate, a better average standard of occupancy of houses is being attained, which is exercising a salutary influence on overcrowding generally.

(5) The highest incidence of overcrowding falls upon the single-apartment houses, and it is suggested that the time has now come when the occupancy of these houses should be subject to control.

(6) The more urgent problems of housing centre round the overcrowded house and the uninhabitable house. Other problems, such as the possibility of reconstruction and reconditioning (Whitson Report), elimination of the common water-closet, and control of occupancy of houses, add to the complexity of the situation. These are subsidiary to, and contingent upon, the further provision of houses at reasonably low rentals.

(7) As regards shortage of houses, building by the local authority to meet the growth of population has practically ceased. The principal housing requirement, from a public health standpoint, is the provision of moderately rented houses within the capacity of the working classes to afford. The expression "shortage of houses" is used in the sense of shortage of houses of suitable size and type. Questions of finance, subsidy, and procedure involved in the abatement of overcrowding or in the provision of moderately-rented houses are not touched upon.

(8) Slum clearance and re-housing is a separate problem. As regards re-housing in relation to management, the system which has been evolved in Glasgow, and its results, are described, and reasons given for regarding this function as belonging to public health administration. The civic problem presented by the difficult or unsocial tenant will require attention at some later date.

APPENDIX No. VI.
GLASGOW.

Vital Statistics of Typical Clearance and Improvement Areas which have been carried out.

SCHEME.	1923	1923	1923	1923	1926	1926	1927	1927	1928	1928	1929	1933
Area.	Clyde Street and Piccadilly Street	Richard Street (South Side).	Richard Street (North Side).	Muse Lane.	Water Street.	Rose Street.	Coalhill Street.	Runford Street.	Possil Road.	Whitelaw Street.	Calton.	Garnagad.
Population,	725	1,101	930 1·82	602	653	770	749	1,415	690	918	5,151	2,042
Acreage,	·785			·398	1·509	·816	2·324	4·329	1·438		3·797	12·32	6·8771
Density,	923		1,116	1,513	433	943	322	326	480	242	418·2	297
Death-Rate, All Causes, ...	30·9	31·65	24·82	22·1	25·7	32·2	24·57	24·45	24·93	20·26	22·48	28·99
“ “ Respiratory Diseases,	6·3	7·39	6·6	5·7	5·2	10·1	6·14	6·08	5·80	4·14	4·63	7·25
“ “ Pulmonary Tuberculosis,	2·5	2·65	2·21	2·3	1·84	1·6	1·87	2·83	0·87	1·74	1·69	1·96
Infant Mortality Rate, ...	191·4	166·02	136·1	147·8	148	190	174	138	191	193	141	178
Figures are Annual Average of Years,	1917-21	1917-21	1917-21	1917-21	1921-25	1921-25	1921-25	1921-25	1923-27	1923-27	1926-28 (3 yrs.)	1928-32

APPENDIX No. VII.
Hamiltonhill Rehousing Scheme—Vital Statistics.
Number of Houses = 728
Population = 3,712

	Hamiltonhill Scheme.						City.	
	Years.						1928-1932 combined.	1929-1932 combined.
	1928	1929	1930	1931	1932	1928-1932 combined.	1928-1932 combined.	1929-1932 combined.
Number of Births,	122	132	122	110	109	595	—	—
Deaths—All Causes,	76	64	48	62	50	300	—	—
„ Pulmonary Tuberculosis,	5	3	4	5	2	19	—	—
„ Respiratory Diseases,	15	16	9	13	10	63	—	—
„ under 1 Year of Age,	20	14	13	14	13	74	—	—
Death-rate per 1,000 Population—								
All Causes,	20.47	17.24	12.93	16.70	13.47	16.16	14.77	14.85
Pulmonary Tuberculosis,	1.35	0.81	1.08	1.35	0.54	1.02	0.87	0.87
Respiratory Diseases,	4.04	4.31	2.42	3.50	2.69	3.39	2.54	2.57
Infantile Mortality Rate per 1,000 Births,	164	106	107	127	119	124	106	106
Birth-Rate per 1,000 Population,	32.87	35.56	32.87	29.63	29.36	32.06	21.17	21.04

SECTION II.—HOUSING OPERATIONS IN THE CITY.

By Dr. W. G. Clark.

HOUSING (SCOTLAND) ACT, 1930.

During the year negotiations were continued with the owners of properties affected by the Garngad Clearance Scheme, and finally a public inquiry was held towards the end of the year in respect of properties owned by two persons with whom the Local Authority could not come to terms. It is anticipated that the Order in connection with this scheme will be made by the Department of Health early next year. Meanwhile rehousing development proceeded in this area on sites regarding which there had been no dispute.

Negotiations are still proceeding in connection with certain of the properties in the Landressy Street Clearance Area, although it will be seen from the appended tables that some of the tenants have already been removed. During the year it was decided to deal with the insanitary houses in the Nitshill district under Section 16 of the Act, leaving the sites in the possession of the respective owners. The rehousing developments in this area are proceeding, and the insanitary houses in this part of the city will be closed early next year.

Owing to the passing of the Housing (Financial Provisions) (Scotland) Act, 1933, which reduced the subsidy of £9 per house of the 1924 Act to £3, it was decided to refrain from proceeding with the Dalmarnock Ward Clearance Area until the area had been studied from the point of view of the improvement area procedure under the 1930 Act. A decision in respect of this area had not been arrived at by the end of the year, but subsequently it was agreed to proceed by the clearance area method.

The reduced subsidy of the 1933 Act has made Local Authorities reconsider their efforts to relieve overcrowding. The State subsidy of £3 per house for 40 years is available only to Scottish Local Authorities, and is said to be a recognition of the need in Scotland for the provision of alternative accommodation for the unduly large numbers of the population living in overcrowded houses and able to pay only a restricted rent, the maximum rent in such subsidised houses having been laid down at 6s. 6d. per week, exclusive of rates.

It is the feeling of the Local Authority that they will be unable to carry out the terms of the 1933 Act, and that any relief of overcrowding must be found in the improvement area procedure of the 1930 Act. Few, if any, Authorities in Scotland have taken action under this procedure, which seems to be more suited to small compact communities than to the cities.

Certain areas in the city are being resurveyed with a view to trying out the procedure, but it should be pointed out that the Scottish Departmental Committee on Housing, whose report was presented to Parliament in December of this year, recommended that some financial assistance should be given to owners of working-class houses to enable them to recondition their houses so as to attain a proper standard of occupation, as indicated in the bye-laws suggested by the committee, or at least to attain a minimum standard. This committee was of opinion that in view of their recommendations involving additional burdens and obligations on property owners, it was only equitable and right that the State and Local Authority should pay a part of the cost of carrying out improvements which are being enforced for the first time. If these recommendations find their place in a statute, it would appear only right that the improvement area procedure of the 1930 Act should be altered, as it would be anomalous to give a grant for the improvement of working-class houses outwith the improvement area, and to insist on the owner within the improvement area bringing his property up to a proper standard without financial assistance.

Section 16.—During the year 872 houses were dealt with under Section 16 of the Act and Demolition Orders were passed on 655 houses, while in 204 cases undertakings were accepted that the houses would not be used for human habitation. Details are shown in an appended table.

The increased provision of alternative accommodation has enabled procedure under this Section to be speeded up, and, while objections on behalf of owners are becoming more numerous, little difficulty has been experienced so far in closing property regarded officially as unfit for human habitation. It is apparent, however, that the difficulty will increase as the standard of what constitutes an unfit house rises. Most of the frankly dilapidated houses in the city have been dealt with, and the problem is now the house which suffers more from environmental defects than the house with gross disrepair. It may be pointed out that absence of certain features affect habitability more than the presence of obvious disrepair,

The Five Years' (1934-1938) Programme.—In terms of Sub-Section 2 of Section 22 of the Housing (Scotland) Act, 1933, the Local Authority was required to submit to the Department of Health for Scotland a general statement of the measures they proposed to take for dealing with housing conditions in their district, and for the provision of further housing accommodation. To enable this to be done a fresh survey was made of the uninhabitable houses in the city. Of the 13,568 houses which were regarded as unfit for human habitation in the 1930 survey, 2,364 had been dealt with up to the end of July of this

year, leaving 11,204 to be dealt with. 1,600 houses, which had not been included in the 1930 survey, were now regarded as unfit for human habitation, giving a total at that date of 12,800 unfit houses in the city. On the experience of the three preceding years, it was estimated that the number of houses falling into the category of unfit each year was 500, or 2,500 by the end of 1933. This number added to those regarded as unfit for human habitation would bring the grand total up to 15,300 by the end of 1938.

With regard to the problem to be faced by the Local Authority in the relief of overcrowding, the only accurate information is contained in the census figures for 1931, where it was shown that on a standard of more than three persons per room 29,371 houses were overcrowded, 28,000 of which were houses of one and two apartments. It has to be recognised that this standard is a low one, and that if the standard of two persons per room be applied the number of families living in overcrowded conditions was 74,398. On a standard of three or more persons per room the number of overcrowded families was 50,484. The Corporation agreed to the following programme:—

	Number required.	Number to be built.
To replace Unfit Houses,	15,000	8,000
To abate Overcrowding,	22,000	12,000
To meet Growth of Population,	6,000	(Under consideration.)

In arriving at the figure of 22,000 houses required to relieve overcrowding, the Corporation took into consideration the fact that a certain amount of relief could be obtained by the movements of tenants between existing houses, and that this movement would take place after a sufficient amount of new accommodation had been made available. Subsequently the Corporation informed the Department of Health that, while the figures given in the programme were an estimate of the work which could be carried out, the programme was not to be considered as the limit of endeavour, and if further expedition were possible the figures would be increased.

It is the declared intention of the Government to overtake the clearance of the slums in the country within a period of five years, and to tackle the problem of overcrowding at an early date.

These expressed views indicate that the provisions of the 1930 Act have not proved entirely satisfactory; it is also now recognised that the problems of the unfit house and of overcrowding are not synonymous. The present statutory powers to deal with the unfit house are satisfactory, apart from those defects which have been referred to in previous reports. Experience in Glasgow shows clearly that overcrowding is a

problem of the individual house, and is present in varying degrees throughout the city. It is obvious, therefore, that a measure for the relief of overcrowding must be general in its application, and should not be contingent upon the fitness of the house.

It would be logical to insist that the occupancy of any house from which an overcrowded family had been removed should be controlled. It is suggested, therefore, that the problem of overcrowding could be solved by the provision of a certain number of new houses and the control of the house vacated by the overcrowded family. The reduction in the birth-rate is of itself assisting the problem, and the provision of new houses of the better type by Local Authorities and private enterprise has rendered available by a process of upward movement a certain number of houses, but the majority thus rendered vacant are not within the means of the poorer classes.

It has been stated that the provision of new houses for the specific purpose of relieving overcrowding will result in a large number of privately-owned houses becoming unoccupied, and in this connection it is suggested that the number of houses to be erected by any Local Authority for the relief of overcrowding should require the approval of the Department of Health.

If the number of privately-owned houses remaining unlet shows a definite increase, it is obvious that they are not fulfilling requirements, either from financial reasons, from deterioration of the house, or from deterioration of the district. This problem must be faced by the owners of property, and can only be solved by a spirit of co-operation and goodwill.

Inspections, &c.—For the purpose of Section 14(1) of the above Act, 26 inspections were made during the year. The details as to inspections, notices issued, and defects found are as follows:—

Division.	Inspections.	Notices issued.	No. of Defects.	No. of Houses Affected.
Central, ...	—	—	—	—
Northern, ...	6	1	2	1
Eastern, ...	—	—	—	—
South-Eastern, ...	—	—	—	—
South-Western, ...	20	1	9	1
	26	2	11	2

The work was carried out by the owners in all cases, and no work was required to be done by the Local Authority.

Closing Orders.—For the purposes of Section 16 of the 1930 Act, 5,456 inspections were made, resulting in the representation to the Local Authority of 872 houses considered to be unfit for human habitation. The decisions of the Housing Committee as

to the action to be taken and the position of the houses at 31st December, 1933, are shown in the following tables:—

SUMMARY STATEMENT SHOWING POSITION WITH REGARD TO REPRESENTATIONS
MADE UNDER SECTION 16 DURING 1933.

Division.	NUMBER OF HOUSES.						NUMBER OF HOUSES.					FAMILIES REHOUSED				
	Number of Houses Represented.	Closing Orders.	Demolition Orders.	Not to be used for Human Habitation.	To be Rendered Fit and Occupied.	Closed.	Demolished.	Rendered Fit and Occupied.	Converted into Business Premises.	Still Occupied.	Rehousing Scheme.	"Intermediate "	Private Property.	Unknown.	Unoccupied.	
Central, ...	173	—	82	91	—	77	—	—	—	96	62	—	8	7	—	
Northern, ...	238	—	165	60	13	86	97	—	—	55	175	—	—	8	—	
Eastern, ...	261	—	225	36	—	52	65	—	—	144	103	1	3	10	—	
South-Eastern, ...	143	—	143	—	—	8	—	—	—	135	7	—	—	1	—	
South-Western, ...	57	—	40	17	—	20	36	—	—	1	46	—	12*	—	—	
	872	—	655	204	13	243	198	—	—	431	393	1	23	26	—	

* Includes two cases of double occupancy.

DETAILED STATEMENT SHOWING POSITION WITH REGARD TO REPRESENTATIONS
MADE UNDER SECTION 16, HOUSING (SCOTLAND) ACT, 1930, DURING 1933.

PROPERTY.	NUMBER OF HOUSES.			NUMBER OF HOUSES.			FAMILIES REHOUSED--					REMARKS.			
	Number of Houses Represented.	Closing Orders.	Demolition Orders.	Not to be used for Human Habitation.	To be rendered Fit for Human Habitation.	Demolished.	Rendered Fit and Occupied.	Converted into Business Premises.	Still Occupied.	Rehousing Scheme.	Substituted for Families Transferred.		"Intermediate" Scheme.	Private Property.	Unknown.	Unoccupied at date of Report.
69 Franklin Street (F.L.),	4	—	4	—	—	4	—	—	—	2	—	—	2	—	—
86A Reid Street, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
86 Reid Street (F.L.),	1	1	—	—	1	—	—	—	—	1	—	—	—	—	—
221 Holm Street (E. and S.),	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
225 Holm Street (F.L.),	5	—	—	5	—	—	—	—	—	4	—	—	1	—	—
2 Whitehall Street (F.L.),	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
107 Stobcross Street (F.L.),	6	—	—	6	6	—	—	—	—	3	—	—	3	—	Basement houses.
473 St. Vincent Street (F.L.),	2	—	—	2	2	—	—	—	—	2	—	—	—	—	Basement houses.
479 St. Vincent Street (F.L.),	2	—	—	2	2	—	—	—	—	2	—	—	—	—	Basement houses.
481 St. Vincent Street (F.L.),	4	—	—	4	4	—	—	—	—	1	—	—	1	2	Basement houses.
487 St. Vincent Street (F.L.),	1	—	—	1	1	—	—	—	1	—	—	—	—	—	Basement house.
77 Renfrew Street (F.L.),	2	—	—	2	2	—	—	—	—	1	—	—	—	1	Basement houses.
129 Renfrew Street (F.L.),	1	—	—	1	1	—	—	—	—	—	—	—	—	1	Basement house.
135 Renfrew Street (F.L.),	1	—	—	1	1	—	—	—	—	—	—	—	—	—	Basement house.
111, 115, 117 Matland Street (Left Stair), ...	12	12	—	—	—	12	—	—	—	11	—	—	—	1	—
117 Matland Street (Right Stair),	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
521/525 Dobbie's Loan (F.L.),	19	19	—	—	—	19	—	—	—	16	—	—	—	3	—
528 Dobbie's Loan (F.L.),	2	—	2	—	2	—	—	—	—	2	—	—	—	—	—
538 Dobbie's Loan (F.L.),	10	—	—	10	10	—	—	—	—	10	—	—	—	—	—
546 Dobbie's Loan (F.L.),	19	—	—	19	19	—	—	—	—	19	—	—	—	—	—
4 and 6 Water Street (F.L.),	6	—	—	6	6	—	—	—	—	6	—	—	—	—	—
13, 15, 17 Water Street (F.L.),	7	—	—	7	7	—	—	—	7	—	—	—	—	—	—
57 Tayport Street (F.L.),...	6	—	6	—	—	6	—	—	—	6	—	—	—	—	—
15 Tayport Street (F.L.),	4	4	—	4	—	4	—	—	—	4	—	—	—	—	—
11, 13 Tayport Street, (F.L.)	4	4	—	—	—	4	—	—	—	4	—	—	—	—	—
9 Tayport Street (F.L.), ...	4	4	—	—	—	4	—	—	—	4	—	—	—	—	—

DETAILED STATEMENT SHOWING POSITION WITH REGARD TO REPRESENTATIONS
MADE UNDER SECTION 16, HOUSING (SCOTLAND) ACT, 1930, DURING 1933—Continued.

PROPERTY.	NUMBER OF HOUSES.					NUMBER OF HOUSES.					FAMILIES REHOUSED—					REMARKS.	
	Number of Houses Represented.	Closing Orders.	Demolition Orders.	Not to be used for Human Habitation.	To be Rendered Fit for Human Habitation.	Closed.	Demolished.	Rendered Fit and Occupied.	Converted to Business Premises.	Still Occupied.	Rehousing Scheme.	Substituted for Families Transferred.	"Intermediate" Scheme.	Private Property.	Unknown.		Unoccupied at date of Representation.
91, 93, 103 Biggar Street (South Propy.), ...	4	—	—	4	—	4	—	—	—	—	4	—	—	—	—	—	
97, 99, 103 Biggar Street (North Propy.), ...	4	—	—	4	—	3	—	—	—	1	3	—	—	—	1	—	
107 Green Street (B.L.), ...	6	—	6	—	—	6	—	—	—	—	5	—	—	—	—	—	
10 Ewing Place (North F.L.), ...	3	—	—	3	—	2	—	—	—	1	2	—	—	—	—	—	
22 M'Keith Street (F.L.), ...	2	—	2	—	—	2	—	—	—	—	2	—	—	—	—	—	
33 Rogart Street (B.L.), ...	2	—	—	2	—	2	—	—	—	—	2	—	—	—	—	—	
78 Milton Street (F.L.), ...	1	—	1	—	—	1	—	—	—	—	1	—	—	—	—	—	
552 St. Vincent Street (F.L.), ...	2	—	—	2	—	1	—	—	—	1	1	—	—	—	—	—	Basement houses.
930, 942 Argyle Street (F.L.), ...	3	—	—	3	—	1	—	—	—	2	—	—	—	1	—	—	Basement houses.
59, 65, 71 Dover Street (F.L.), ...	6	—	—	6	—	3	—	—	—	3	3	—	—	—	—	—	Basement houses.
15 Breadalbane Street (F.L.), ...	1	—	—	1	—	—	—	—	—	1	—	—	—	—	—	—	Basement house.
9 Breadalbane Street (F.L.), ...	2	—	—	2	—	—	—	—	—	2	—	—	—	—	—	—	Basement houses.
248 Carnoustie Street (F.L.), ...	1	—	—	1	—	1	—	—	—	—	—	—	—	1	—	—	Basement house.
405, 407, 409, 411 Westmuir Street (F.L.), ...	4	—	4	—	—	—	4	—	—	—	4	—	—	—	—	—	
43 Duke Street (1st B.L.), ...	3	—	3	—	—	3	—	—	—	—	3	—	—	—	—	—	
104 Maitland Street (F.L.), ...	1	—	1	—	—	1	—	—	—	—	1	—	—	—	1	—	
2030 London Road (F.L.), ...	1	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	
19 Strachur Street (F.L.), ...	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	Ground flat house.
1123 Tollcross Road (F.L.), ...	2	—	2	—	—	—	2	—	—	—	1	—	1	—	—	—	Ground flat houses.
1129 Tollcross Road (F.L.), ...	2	—	2	—	—	—	2	—	—	—	2	—	—	—	—	—	Ground flat houses.
24 Forbes Street (F.L.), ...	7	—	—	7	—	7	—	—	—	—	7	—	—	—	—	—	Demolition Order with- drawn. Undertaking accepted.

857 Springfield Road (F.L.),	...	3	—	3	—	—	—	—	—	3	—	—	—	—	—	—	Ground flat houses.
32 Lancefield Street (B.L.),	...	16	—	16	—	—	—	—	—	—	—	—	—	—	—	—	—
15 Milton Street (F.L.),	...	10	—	10	—	—	—	—	—	—	—	—	—	—	—	—	—
4 Glenmavis Street (F.L.),	...	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
5 St. Peter's Street (F.L.),	...	2	—	2	—	—	—	—	—	—	—	—	—	—	—	—	Basement houses.
13 St. Peter's Street (F.L.),	...	2	—	2	—	—	—	—	—	—	—	—	—	—	—	—	Basement houses.
19 St. Peter's Street (F.L.),	...	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	Basement house.
21 Gladstone Street (F.L.),	...	2	—	—	—	2	—	—	—	—	—	—	—	—	—	—	Demolition Order with- drawn. Undertaking accepted.
39, 41, 43 Deanside Lane (F.L.),	...	3	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—
6 Suffolk Street (F.L.),	...	16	—	16	—	—	—	—	—	—	—	—	—	—	—	—	—
13, 15, 17 Weaver Street Stair, ...	...	6	—	6	—	—	—	—	—	—	—	—	—	—	—	—	—
13 Weaver Street (Left Stair),	...	8	—	8	—	—	—	—	—	—	—	—	—	—	—	—	—
38 St. James' Road (F.L.),	...	6	—	—	—	6	—	—	—	—	—	—	—	—	—	—	—
52 St. James' Road (F.L.),	...	4	—	—	—	4	—	—	—	—	—	—	—	—	—	—	—
2 Elba Lane (F.L.),	...	2	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—
296 Stevenson Street (South B.L.),	...	6	—	6	—	—	—	—	—	—	—	—	—	—	—	—	—
35 Grace Street (F.L.),	...	12	—	12	—	—	—	—	—	—	—	—	—	—	—	—	—
80 North Frederick Street (F.L.),	...	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
3 Laird Street (West Propy.),	...	2	—	2	—	—	—	—	—	—	—	—	—	—	—	—	Basement house.
3 Laird Street (East Propy.),	...	2	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—
1577 Shettleston Road (East Propy.),	...	3	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—
1575, 1577, 1579 Shettleston Road (West Propy.),	...	5	—	5	—	—	—	—	—	—	—	—	—	—	—	—	—
129 Corbett Street (South Propy.),	...	3	—	—	—	3	—	—	—	—	—	—	—	—	—	—	—
2 Catherine Place (F.L.),	...	2	—	2	—	—	—	—	—	—	—	—	—	—	—	—	Basement houses.
8 Finnieston Street (F.L.),	...	2	—	2	—	—	—	—	—	—	—	—	—	—	—	—	Basement houses.
18 Finnieston Street (F.L.),	...	2	—	2	—	—	—	—	—	—	—	—	—	—	—	—	Basement houses.
1 Palmerston Place (F.L.),	...	2	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—
924 Paisley Road West (F.L.),	...	2	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—
6 Palm Street (F.L.),	...	2	—	—	—	2	—	—	—	—	—	—	—	—	—	—	Ground flat houses.
26 Maitland Place (F.L.),	...	7	—	7	—	—	—	—	—	—	—	—	—	—	—	—	Ground flat houses.
34 Kent Street (F.L.),	...	4	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—
34 Kent Street (F.L. 1st Floor),	...	8	—	8	—	—	—	—	—	—	—	—	—	—	—	—	—
34 Kent Street (Attics),	...	19	—	19	—	—	—	—	—	—	—	—	—	—	—	—	Attic houses.
40 Kent Street (F.L.),	...	2	—	2	—	—	—	—	—	—	—	—	—	—	—	—	Ground flat houses.
40 Kent Street (1st Floor),	...	2	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—

446 St. Vincent Street (F.L.),	...	2	—	2	—	—	—	—	—	2	—	—	—	—	—	Basement houses.
452 St. Vincent Street (F.L.),	...	2	—	2	—	—	—	—	—	2	—	—	—	—	—	Basement houses.
5 Beltane Street (F.L.),	...	1	—	1	—	—	—	—	—	1	—	—	—	—	—	Basement house.
13 Beltane Street (F.L.), ...	...	2	—	2	—	—	—	—	—	2	—	—	—	—	—	Basement houses.
21 Beltane Street (F.L.), ...	...	2	—	2	—	—	—	—	—	2	—	—	—	—	—	Basement houses.
29 Beltane Street (F.L.), ...	...	2	—	2	—	—	—	—	—	2	—	—	—	—	—	Basement houses.
4 Lyall Place (F.L.), ...	...	1	—	1	—	—	—	—	—	1	—	—	—	—	—	Ground flat house.
508 Keppochhill Road (F.L.),	...	1	—	1	—	—	—	—	—	1	—	—	—	—	—	Ground flat house.
132 Reid Street (B.L.), ...	...	3	—	3	—	—	—	—	—	3	—	—	—	—	—	Ground flat house.
40, 42 Thistle Street (F.L.),	...	19	—	19	—	—	—	—	—	19	—	—	—	—	—	Ground flat house.
132 Main Street (F.L.), ...	...	8	—	8	—	—	—	—	—	8	—	—	—	—	—	Ground flat house.
761 Aikenhead Road (F.L.),	...	16	—	16	—	—	—	—	—	16	—	—	—	—	—	Ground flat house.
548, 562, 574 Prospecthill Road, ...	...	16	—	16	—	—	—	—	—	16	—	—	—	—	—	Ground flat house.
"Black House," Prospecthill Road (F.L.), ...	...	1	—	1	—	—	—	—	—	1	—	—	—	—	—	Ground flat house.
33 Dervarg Street (F.L.),	...	3	—	3	—	—	—	—	—	3	—	—	—	—	—	Ground flat house.
21 Dervarg Street (North Propy.),	...	2	—	2	—	—	—	—	—	2	—	—	—	—	—	Ground flat house.
83 Green Street (East B.L.),	...	8	—	8	—	—	—	—	—	8	—	—	—	—	—	Ground flat house.
83 Green Street (North B.L.),	...	2	—	2	—	—	—	—	—	2	—	—	—	—	—	Ground flat house.
83, 85, 89 Green Street (South Propy.),	...	14	—	14	—	—	—	—	—	14	—	—	—	—	—	Ground flat house.
102 Green Street (B.L.),	...	1	—	1	—	—	—	—	—	1	—	—	—	—	—	Ground flat house.
413 Gallowgate (South Propy.),	...	12	—	12	—	—	—	—	—	12	—	—	—	—	—	Ground flat house.
413 Gallowgate (North Propy.),	...	5	—	5	—	—	—	—	—	5	—	—	—	—	—	Ground flat house.
47, 59 Cumberland Lane (F.L.),	...	17	—	17	—	—	—	—	—	17	—	—	—	—	—	Ground flat house.
51, 51A Cumberland Lane (F.L.),	...	17	—	17	—	—	—	—	—	17	—	—	—	—	—	Ground flat house.
33, 55 Cumberland Lane (F.L.),	...	17	—	17	—	—	—	—	—	17	—	—	—	—	—	Ground flat house.
32 Cumberland Lane (South and North Stairs),	...	12	—	12	—	—	—	—	—	12	—	—	—	—	—	Ground flat house.
31 Wellcroft Place (F.L.),	...	8	—	8	—	—	—	—	—	8	—	—	—	—	—	Ground flat house.
7A Burnside Street (B.L.),	...	25	—	25	—	—	—	—	—	25	—	—	—	—	—	Ground flat house.
15 Burnside Street (F.L.),	...	3	—	3	—	—	—	—	—	3	—	—	—	—	—	Ground flat house.
9 Cathedral Street (F.L.),	...	16	—	16	—	—	—	—	—	16	—	—	—	—	—	Ground flat house.

872 — 655 204 13 243 198 — — 431 391 2 1 23 26

DETAILED STATEMENT SHOWING FURTHER ACTION TAKEN WITH REGARD TO REPRESENTATIONS
MADE IN YEARS 1930, 1931, AND 1932.

PROPERTY.	NUMBER OF HOUSES.				NUMBER OF HOUSES.				FAMILIES REHOUSED—						Remarks		
	Number of Houses Represented.	Closing Orders.	Demolition Orders.	Not to be used for Human Habitation.	To be Rendered Fit for Human Habitation.	Closed.	Demolished.	Rendered Fit and Occupied.	Converted into Business Premises.	Still Occupied.	Rehousing Scheme.	Substituted for Families Transferred.	"Intermediate" Scheme.	Private Property.		Unknown.	Unoccupied at date of Representation.
Properties represented in 1930—																	
3 Cadzow Street, ...	7	—	4	3	—	7	—	—	—	—	4	1	—	2	—	—	1
1624 Maryhill Road, ...	2	—	2	—	2	2	—	—	—	—	1	—	—	—	—	—	—
Properties represented in 1931—																	
5 Rosehall Street (F.L.), ...	2	—	2	—	—	1	—	—	—	1	1	—	—	—	—	—	Basement houses.
46 Shamrock Street (F.L.), ...	1	—	1	—	—	—	—	—	—	1	—	—	—	—	—	—	Basement house.
110 Port-Dundas Road (F.L.), ...	6	—	6	—	6	6	—	—	—	—	6	—	—	—	—	—	—
7 Provandhill Street (F.L.), ...	32	—	32	—	—	—	32	—	—	—	30	—	—	1	1	—	—
275 Springburn Road (B.L.), ...	11	—	11	—	10	—	—	1	—	1	8	—	—	2	—	—	—
100 Crownpoint Road (B.L.), ...	6	—	6	—	—	—	6	—	—	—	4	—	—	1	1	—	—
94 Crownpoint Road (B.L.), ...	6	—	6	—	—	—	6	—	—	—	5	—	—	1	—	—	—
79, 81, 83 Tobago Street (South F.L.), ...	12	—	12	—	—	—	12	—	—	—	6	—	—	4	2	—	—
81, 89, 91 Tobago Street (North F.L.), ...	11	—	11	—	—	—	11	—	—	—	5	—	—	3	3	—	—
81 Tobago Street (B.L.), ...	4	—	4	—	—	—	4	—	—	—	2	—	—	—	2	—	—
95, 97, 99 Tobago Street (F.L.), ...	10	—	10	—	—	—	10	—	—	—	8	—	—	1	1	—	—
97 Tobago Street (South B.L.), ...	4	—	4	—	—	—	4	—	—	—	4	—	—	—	—	—	—
97 Tobago Street (North B.L.), ...	4	—	4	—	—	—	4	—	—	—	3	—	—	1	—	—	—
103, 105, 107 Tobago Street (South F.L.), ...	7	—	7	—	—	7	—	—	—	—	3	—	—	3	1	—	—
105 Tobago Street (South B.L.), ...	4	—	4	—	—	—	4	—	—	—	2	—	—	2	—	—	—
105 Tobago Street (North B.L.), ...	4	—	4	—	—	—	4	—	—	—	4	—	—	—	—	—	—
105, 109 Tobago Street (North F.L.)	2	—	2	—	—	—	2	—	—	—	—	—	—	—	1	1	—
9 Glendale Street (F.L.), ...	9	—	9	—	—	—	9	—	—	—	8	—	—	—	1	—	—
460 Lawmoor Street (F.L.), ...	1	—	1	—	—	1	—	—	—	—	1	—	—	—	—	—	Ground flat house.
24 Nicholson Street (F.L.), ...	14	—	14	—	—	14	—	—	—	—	8	—	—	5	1	—	Basement houses.

[illegible]

SLUM CLEARANCE AND REHOUSING.

The following summary shows the position of the various schemes as at the end of 1933:—

	NUMBER OF HOUSES.				Total Houses in Scheme.
	Demolished.	Converted to Business Premises.	Closed.	Still Occupied.	
Parliamentary Road Scheme,	121	—	—	—	121
1923 Scheme,	1,858	—	—	—	1,858
1926 " 	1,052	—	—	—	1,052
1927 " 	1,019	—	—	—	1,019
1928 " 	1,065	10	31	—	1,106
1930 " 	1,288	—	—	—	1,288
Old Shettleston Road Area,	89	—	40	2	131
Landressy Street Area, ...	5	—	56	107	168
Garscube Road Area, ...	66	—	109	50	225
Garngad Road Area, ...	57	—	111	410	578
	6,620	10	347	569	7,546

Further details of schemes which were not completed at the end of 1932 are given in the following notes:—

(a) The Glasgow (Calton) Improvement Scheme, 1930.—At the end of 1932, 72 houses (68 closed and 4 occupied) remained to be dealt with. During 1933 the scheme was finally completed, the 72 houses being demolished and 5 tenants in the 4 occupied houses being transferred to rehousing schemes.

(b) Old Shettleston Road Clearance Area.—At the end of 1933 only 40 closed houses and 2 occupied houses remained to be dealt with.

<i>Houses—</i>	1 Apt.	2 Apts.	3 Apts.	4 Apts. and up.	Total.
No. closed and demolished prior to 31/12/32,	—	—	—	1	1
No. closed in 1932 and demolished in 1933, ...	1	—	—	—	1
No. closed in 1933 and demolished in 1933, ...	43	43	—	1	87
No. closed in 1933 and not demolished at 31/12/33,	6	30	2	2	40
No. still in occupation at 31/12/33,	—	—	—	2	2
	50	73	2	6	131

<i>No. of Families—</i>	Prior to 31/12/32.	During 1933.	Total.
Transferred to Rehousing Schemes,	2	125	127
For whom "substitution" arranged,	—	1	1
Removing voluntarily on account of non-payment of rent, etc.,	—	3	3
To be provided for at 31/12/33,	—	—	3
	2	129	134

(c) Landressy Street Clearance Area.—The clearance resolution for this area was passed by the Corporation in August, 1932. The original resolution comprised 190 houses, but subsequently it was decided to adopt the procedure under Section 16 of the Act for two of the areas, and the resolution was modified to this extent. The following table shows the progress made in dealing with the area.

<i>Houses—</i>	1 Apt.	2 Apts.	3 Apts.	4 Apts.	Total.
No. closed and demolished prior to 31/12/32,	—	—	—	—	—
No. closed and demolished during 1933, ...	1	3	1	—	5
No. closed in 1932 and not demolished at 31/12/33,	1	2	—	—	3
No. closed in 1933 and not demolished at 31/12/33,	15	33	5	—	53
No. still in occupation at 31/12/33,	45	57	4	1	107
Total houses in Scheme,	62	95	10	1	168

<i>No. of Families—</i>	Prior to 31/12/32	During 1933.	Total.
Transferred to Rehousing Schemes,	4	53	57
For whom "substitution" arranged,	—	—	—
Removing voluntarily or on account of non-payment of rent,	—	5	5
To be provided for at 31/12/33,	—	—	118
	4	58	180

(d) Garscube Road Area.—The Corporation passed a clearance resolution in respect of this area on 18th August, 1932. The position of the scheme as at the end of the year was as follows:—

<i>Houses—</i>	1 Apt.	2 Apts.	3 Apts.	4 Apts.	Total.
No. closed and demolished during 1933, ...	57	9	—	—	66
No. closed prior to 31/12/32 and not demolished at 31/12/33,	—	—	1	—	1
No. closed during 1933 and not demolished at 31/12/33,	58	50	—	—	108
No. still in occupation at 31/12/33,	37	13	—	—	50
Total houses in Scheme,	152	72	1	—	225

<i>No. of Families—</i>	Prior to 31/12/32.	During 1933.	Total.
Transferred to Rehousing Schemes,	—	176	176
For whom "substitution" arranged,	—	1	1
Removing voluntarily or on account of non-payment of rent, etc.,	—	—	—
Still in occupation at 31/12/33,	—	—	56
	—	177	233

(c) Garngad Road Clearance Area.—The Corporation passed a clearance resolution in respect of this area on 16th March, 1933. This area is situated in Provan Ward, bounded on the north by Garngad Road and on the south by Garngadhill, and comprises 407 houses of one apartment, 108 of two apartments, and 3 houses of three apartments, a total of 518 inside the Clearance Area. There are other 60 houses outside the Clearance Area which are required to allow for proper redevelopment of the area. The position as at the end of the year was as follows:—

<i>Houses—</i>	1 Apt.	2 Apts.	3 Apts.	4 Apts.	Total.
No. closed and demolished prior to 31/12/32,	4	3	—	—	7
No. closed in 1932 and demolished in 1933,	4	9	—	—	13
No. closed in 1933 and demolished in 1933,	32	4	1	—	37
No. closed in 1933 and not demolished at 31/12/33,	98	12	1	—	111
No. still in occupation at 31/12/33,	283	125	2	—	410
	421	153	4	—	578

<i>No. of Families—</i>	Prior to 31/12/32.	During 1933.	Total.
Transferred to Rehousing Schemes,	15	143	158
For whom "substitution" arranged,	3	2	5
Removing voluntarily or on account of non-payment of rent, etc.,	—	—	—
To be provided for at 31/12/33,	—	—	411
	18	145	574

SURVEY OF REHOUSING SCHEMES.

By Dr. W. C. Gunn.

There are in Glasgow fifty rehousing schemes, varying very considerably in extent and altogether comprising 8,512 houses. The annexed list shows the growth of rehousing in the city and the number of houses in each rehousing scheme. The conditions of these houses is supervised by fourteen nurse inspectors, and, as in former years, the schemes have been surveyed by random visitation along with the responsible nurse inspector in each district. In the course of the survey about 500 houses were thus visited with special reference to backward tenants and vermin infestation.

Each year has added valuable experience to the work of the nurse inspectors. Their duties are largely advisory and always demand great tact, and the results of their visits to houses where backward housekeeping is in evidence are progressively favour-

able. The following table shows how largely the clean house predominates, and many of these are well nigh perfect examples of housekeeping. Many of the fair houses almost qualify for the clean category, and the hopelessly dirty or bug-infested house is the exception in each area:—

1932.			1933.		
Clean.	Fair.	Dirty.	Clean.	Fair.	Dirty.
74.5%	24.3%	1.1%	74.7%	24.5%	.82%

In spite of supervision, however, and the greatly increased attention drawn to this persistent pest in publications by the Department of Health for Scotland (1933) and by the Ministry of Health (1934), the bed bug establishes itself here and there, chiefly owing to some fault in housekeeping by the tenant. Most frequently the acceptance or purchase of second-hand articles of furniture is still found to be the cause of infestation, although many of the tenants may be otherwise clean. But in counteracting infestation by the bed bug the nurse inspectors are steadily overcoming all difficulties because their knowledge of its life history aids them in detecting its presence at once. They have also managed to reduce the danger of infestation by persuading tenants to adopt the practice of painting or distempering their walls instead of papering them. It has been observed that tenants now more readily inform the nurse inspector of the presence of bugs than they did formerly. Increased knowledge has certainly brought about the improvement. In practically every instance where bugs have been found the nurse inspector has detected the infestation early, and the remedy has usually been easy. During 1933 the bed bug has been found in 520 instances, and some of these were recurrences. At times, especially in the older rehousing schemes where there is more woodwork, the co-operation of the City Improvements Department has been sought in order that picture rails or door facings might be removed and disinfection of the back of these structures carried out. In one persistent case one or two floorboards had to be removed. Very few fumigations with sulphur dioxide have been applied throughout the year because of the early detection of the insect. Strict attention to prevention of infestation will obviate entirely the necessity for applying lethal gases. *Household cleanliness and strict supervision of beds and furniture* are absolutely necessary in the prevention of infestation. The nurse inspectors are now fully alive to the necessity for minute inspection of furniture, beds, and woodwork for all stages in the development of the insect. Without this skilled supervision many houses would become hopelessly infested.

There is a noticeable tendency throughout the rehousing schemes, especially the newer ones, to reduce the number of

pictures on the walls, and overcrowding of the rooms with furniture is not nearly so frequent. There are unfortunately many instances where the furnishing of the rooms is very sparse because of poverty, and this is especially obvious in some of the four-apartment houses. Particular attention has been paid to the physical condition of children in the rehousing areas, and this aspect of rehousing is most encouraging. The child showing malformations from rickets is the exception. In most of the areas the garden plots have been cultivated, and numerous first-class examples of decorative gardens exist. This, of course, applies particularly to the rehousing schemes nearer the outskirts of the city, but good work is appearing everywhere.

At one time the Polmadie and Springfield Road Rehousing Schemes were subjects of considerable anxiety owing to carelessness on the part of the tenants. In fact, this state of affairs originated the nurse inspector service of the Public Health Department. Now these two schemes are as exemplary as those more recently occupied, and are very good examples of the value of organised and tolerant inspection. In practically every instance the tenants meet the health officers on friendly terms, and little difficulty is experienced in maintaining reasonable cleanliness. Houses occupied by large families of young children or by old and infirm people usually provide the unsatisfactory types. Where there is employment the atmosphere of prosperity is naturally apparent. This systematic visit to the rehousing schemes has left an impression that cooking has not generally reached as high a standard as it should, although the facilities are excellent. There are, however, very many examples of the thrifty housewife who furnishes definite proof that the backward cooks could easily do better. Perhaps the institution of cookery classes for rehousing schemes might improve this situation, which may be partly due to inexperience or fear of gas cookers. Lack of means may account to some extent for lack of enterprise in devising wholesome menus.

With special regard to the tenants removed from the Calton Slum Clearance Area who have been kept under observation since early in 1932, the following table shows how they are progressing:—

		Clean.	Fair.	Dirty.
Spring, 1932,	...	55.0%	40.0%	2.0%
Spring, 1933,	...	63.0%	29.0%	1.0%
Spring, 1934,	...	67.0%	25.7%	1.0%

Clean houses are steadily increasing in number among this group, and cleanliness generally is approximating to that observed throughout the rehoused population.

REHOUSING SCHEMES.

Year of Opening.	Name of Rehousing Scheme.	No. of Houses.
1923	Hamiltonhill,	728
1923	Scotstoun,	96
1924	Springfield Road,	308
1924	Belvidere,	236
1924	Newbank,	358
1924	Polmadie,	132
1924	Whitefield Road, Govan,	114
1924	Yorkhill,	84
1925	Campbell Street,	138
1926	Garvald Street,	24
1927	Duke Street,	216
1927	Govanhill,	288
1928	Germiston,	690
1928	M'Neil Street,	180
1929	Haghill No. 1,	318
1929	Burgher Street,	12
1929	Westmuir Street,	36
1929	Gairbraid Avenue,	366
1930	Parkhead,	96
1930	Janefield,	120
1930	Saracen,	312
1931	Haghill No. 3,	54
1931	Gallowgate,	14
1931	Quarrybrae,	354
1931	M'Nair Street,	288
1931	Rumford Street,	108
1931	Whiteinch,	66
1932	Crownpoint Road,	12
1932	Soho Street,	18
1932	Orr Street,	18
1932	Wellfield Street,	72
1932	Cathedral Street,	18
1932	Whitelaw Street,	150
1932	High Craighall Road,	216
1932	Dobbie's Loan,	36
1932	Dunblane Street,	12
1932	Keppochhill Road,	24
1932	Carnwadric,	144
1933	South Carntyne,	494
1933	South Carntyne Hostel,	34 (incl care-takers)
1933	Cuthelton Street,	348
1933	South Chester Street,	156
1933	Calton,	330
1933	Madras Street,	66
1933	East Keppoch,	330
1933	Garnagad,	120
1933	Trossachs Street,	54
1934	Coalhill Street,	60
1934	Garscube Road,	12
1934	Cheapside Street,	18
1934	Clydeferry Street,	30
Total,		<u>8,312</u>

CONDITIONS IN SLUM CLEARANCE REHOUSING SCHEMES.

House-to-house visitation in rehousing schemes is undertaken by lady inspectors of the department for the purpose of assisting the tenants to maintain satisfactory standards of occupancy. At the beginning of the year 6,206 tenants were under supervision, and at the end of the year this number had increased to 6,913. Removals during the year numbered 342, or about 5 per cent. of the total occupancies. Of the 342 removals, 105 left voluntarily, while the remainder were evicted or left owing rent:—

No. of tenants under supervision at 1st January, 1933,	6,206	
Of which evicted or left owing rent during 1933,	215	
Of which left voluntarily during 1933,	94	
	<hr/> 309	5,897
No. of tenants obtaining entry during 1933,	1,049	
Of which evicted or left owing rent during 1933,	22	
Of which left voluntarily during 1933,	11	
	<hr/> 33	1,016
No. of tenants under supervision at 31st December, 1933,		6,913

The lady inspectors keep records showing the condition of each house visited, and these records have been analysed to compile the following notes:—

Of the 6,913 houses occupied at the end of the year, 5,165 were classed as clean, 1,693 as fair, and 55 as dirty, representing 74·7 per cent., 24·5 per cent., and 0·8 per cent. respectively of the total. The corresponding percentages for occupancies as at the end of 1932 were 74·5, 24·4, and 1·1.

In the following table comparison is made of the condition of the houses at the beginning and end of the year for the 5,897 families who have been under supervision throughout the whole year:—

		Condition at end of Year.			Totals.	Group Percentage.
		Clean.	Fair.	Dirty.		
Condition at beginning of Year.	{ Clean, ...	4,344	104	—	4,448	75·4
	{ Fair, ...	360	1,018	5	1,383	23·5
	{ Dirty, ...	1	24	41	61	1·1
Totals, ...		4,705	1,146	46	5,897	100·0
Group percentage,		79·8	19·4	0·8	100·0	—

A slight general improvement is to be noted in this group during the year. The number of "clean" houses increased from 4,448 to 4,705, while the number of "fair" houses decreased from 1,383 to 1,146; "dirty" houses were only 46 as against 66. One hundred and four tenants, previously reported as "clean," were transferred to the "fair" category, while 5, who had been classified as "fair," were transferred to the "dirty" category. As a set-off, 360 "fair" and 1 "dirty" had progressed sufficiently to be classified as "clean" and 24 "dirty" to be classified as "fair." The other groups, 4,344 "clean," 1,018 "fair," and 41 "dirty" showed no change.

Similar information is given for the 1,016 tenants who obtained entry during the year and who were still in occupancy at the end of it, and in respect of whom supervision was of shorter duration than that for the preceding group:—

			Condition at end of Year.				Group
			Clean.	Fair.	Dirty.	Totals.	Percentage.
Condition at date of entry.	{	Clean, ...	361	79	1	441	43.4
		Fair, ...	99	462	1	562	55.3
		Dirty, ...	—	6	7	13	1.3
Totals, ...			460	547	9	1,016	100.0
Group percentage, ...			45.3	53.8	0.9	100.0	—

It will be noted that the condition at the end of the year falls short of the standard attained by tenants in residence for the full year—45.3 per cent. as against 79.8 per cent. "clean"; 53.8 per cent. as against 19.4 per cent. "fair"; and 0.9 per cent. as against 0.8 per cent. "dirty."

The following table gives the condition, prior to removal, of the houses occupied by tenants who were evicted or left owing rent and by tenants removing voluntarily:—

				Tenants evicted during 1933.		Tenants removing volun- tarily during 1933.	
				Number.	Group Percentage.	Number.	Group Percentage.
Condition at date of removal.	{ Clean,	...	...	92	38.8	83	79.0
	{ Fair,	...	...	128	54.0	22	21.0
	{ Dirty,	...	...	17	7.2	—	—
				237	100.0	105	100.0

As noted in previous years, the standard of the evicted tenants is much below the average—38.8 per cent. as against 79.8 per cent. "clean"; 54.0 per cent. as against 19.4 per cent. "fair"; and 7.2 per cent. as against 0.8 per cent. "dirty." On the other hand, the condition of the houses of tenants who removed voluntarily is, as one would expect, the same as the general average.

CHANGES IN TENANCY OF A REHOUSING SCHEME.

During the year a careful enquiry was carried out with reference to the movements of tenants in the Germiston Rehousing Scheme. This was done as it was noticed that there had been an unusual amount of movement.

The scheme contains 690 houses, and had within a short period permitted of the rehousing of 1,071 tenants. The great majority of tenants come from houses dealt with under the Housing Act, and while there was an unduly high proportion of substitutions among the first tenants, this rapidly fell when relets became available.

The following table shows the reasons for rehousing the tenants up to 31st December, 1933:—

GERMISTON RE-HOUSING SCHEME.—OCCUPANCY OF HOUSES.

The Scheme includes 690 Houses—340 being of Two-Apartments and 350 of Three-Apartments. One of Three-Apartment Houses is occupied by a Caretaker. Occupancy of Scheme commenced in August, 1928, and was completed in March, 1932.

		Slum Clearance and Demolition Orders.	Master of Works' Action—Dangerous Buildings, &c.	Substitutions.	Transfers from other Housing Schemes.	Transfers within Germiston.	Overcrowding.	Health Reasons.	No Record.
689 First Tenants,	...	513	19	138	2	3	—	—	14
298 Second	„	152	24	74	2	21	5	3	17
87 Third	„	38	9	21	—	9	1	4	5
24 Fourth	„	16	1	2	—	2	—	—	3
7 Fifth	„	7	—	—	—	—	—	—	—
1 Sixth	„	1	—	—	—	—	—	—	—
Total,	...	27	53	235	4	35	6	7	39

378 of the first tenants are still in the Scheme+Caretaker.

382 tenants have left the Scheme.

1,071 tenants have been re-housed in Germiston up to 31st December, 1933.

A careful scrutiny of the information on the case records kept by the nurse inspectresses reveals certain interesting features. During the first seventeen months' experience of houses becoming available, 128 tenants left the scheme, and of these 94 were in arrears of rent. The duration of stay of those who left during this period varied greatly, the majority leaving between the fourth and eighth months. During 1930, 117 tenants left, and of these 82 were in arrears of rent. During this time the length of residence of those who left was more even, although the greatest average number left between 11 and 15 months. In

1931, 35 tenants left, and of these 18 were in arrears of rent. Eight of those left during their first year of residence, 14 and 13 leaving during the second and third year respectively. In 1932, 52 tenants left, 33 being in arrears of rent, 20 during the first year, the remainder in periods varying from thirteen months to four years. During 1933, 53 tenants left, 39 being in arrears of rent, 10 during the first year, the others in periods varying from one year to five years.

It is difficult to obtain really accurate information as to why these tenants left, but of the number who left voluntarily the majority found the scheme inconvenient for their work. Of those who left while in arrears of rent, no particular reason can be given in the majority of cases, while in most of the others inconvenience appears as the most frequent cause of removal. Domestic disturbance, illness, and death are fairly common causes of the removal of tenants in arrears of rent. Again, amongst this class it is found, as was to be expected, that a considerable number have gone to properties which are recognised by this department as being unfit for human habitation, thus focusing attention again on a residual problem of slum clearance, i.e., the undesirable tenant.

Certain facts which have emerged from this enquiry point to some of the problems encountered in the rehousing of tenants from insanitary properties. It is inevitable that the transference of a large number of tenants from different parts of the city to any one rehousing scheme will lead to a number of misfits on account of distance from work or distance from sources of old interests, and to the presence of a high proportion who cannot accustom themselves rapidly to the new conditions, financial and otherwise. Tenants thus affected appear to make an early decision to move, and the houses becoming available enable the City Improvements Department to offer some degree of choice to subsequent tenants.

It is usually found that large rehousing schemes take some time to settle down, and that the ultimate constitution of a scheme is determined by a process of sifting. A subsequent part of this report shows that the schemes which have been occupied for fairly long periods are in a state very creditable to the tenants, and it may be assumed that all the schemes in the city will gradually fall into the same category. The ideal of small schemes on or close to the site of the demolished houses is impossible in Glasgow where the insanitary house is usually situated in an otherwise over-built area, and the larger schemes, with their recognised defects, become the next best thing.

Certain other difficulties in the rehousing of tenants are worthy of consideration. Throughout the schemes in the city there are examples of overcrowding and of the other extreme, under-occupancy. In the earlier schemes, which had a high proportion of two-apartment houses, a degree of overcrowding was inevitable, and throughout the years natural increases in the family have intensified the condition. More recent schemes have contained fewer and fewer two-apartment houses, and now four-apartment houses are being provided; but even yet dispossessed large families have to be rehoused, on occasion, in houses not sufficiently large.

On the other hand, it has sometimes been necessary to rehouse small unit families in accommodation beyond their requirements in order to enable the conditions of Clearance Schemes to be carried out. Again, marriage, deaths, and removal of units amongst families have reduced the original rehoused family to such a size that the accommodation provided is not properly utilised.

These problems, which do not affect the owners of private property, place a difficult responsibility upon the Local Authority. Even the transference of tenants within schemes necessitates some expense in removing, a serious consideration to such tenants.

The hostel for women has helped greatly in the rehousing of the elderly single woman, but so far there is no hostel accommodation for the elderly man. Factors will not accept single men as tenants to permit of substitution, maintaining that they do not keep clean houses nor do they take their turn in sweeping the stairs, &c. Another difficulty encountered in trying to effect substitution has been due to tenants living rent-free in their houses between the date of condemnation and the alternative accommodation becoming available. Such tenants are regarded by some factors as being in arrears of rent or of being rent strikers.

A close liaison exists between the officials of the City Improvements Department and those of this department, and has resulted in a number of overcrowded families being rehoused in suitable accommodation. Any available houses are offered to such tenants from lists submitted by the Health Department.

REHOUSING OF TUBERCULOSIS FAMILIES.

By a resolution of the Corporation made in 1929, 10 per cent. of the "Intermediate" houses were set aside for families where a tuberculous individual lives under overcrowded conditions. The allocation of the houses is made by the General Manager, City Improvements Department, on the recommendation of the

Medical Officer of Health, and the following table shows the position at 31st December, 1933, of the applications recommended since the inception of the scheme:—

Recommendations,	Year Recommended.		Total.
	1929/32.	1933.	
1. <i>Rehoused</i> ,	1,386	180	1,566
2. <i>No further action to be taken</i> —	350	18	368
Income over "Intermediate" scale and refuse ordinary Corporation house,	4	—	4
Not eligible for "Intermediate" and refuse ordinary Corporation house,	1	—	1
Left Glasgow,	7	—	7
Do not now wish rehoused,	24	—	24
Patient dead,	36	2	38
City Improvements Dept. report they will take no further action	8	—	8
No tuberculous patient in family,	2	—	2
Rehoused in non-Corporation houses on own account,	55	1	56
	137	3	140
3. <i>Cannot afford "Intermediate" rentals</i> —			
Waiting for Slum Clearance Houses by substitution,	44	—	44
Cannot pay rental of scheme desired,	1	3	4
Cannot afford "Intermediate" rentals,	103	1	104
Wish application held over meantime,	44	—	44
Unsatisfactory reference,	25	—	25
Will only take house which does not relieve overcrowding,	13	—	13
	230	4	234
4. <i>Position uncertain</i> —			
City Improvements Department still to report,	289	152	441
No reply to p.c. from City Improvements Department,	50	3	53
Gone away and cannot be traced,	24	—	24
	363	155	518
5. <i>Waiting for Rehousing</i> —			
Waiting for particular schemes,	208	—	208
Overcrowding not serious—not urgent,	18	—	18
Waiting,	80	—	80
	306	—	306

SUMMARY OF FAMILIES REHOUSED AT 31ST DECEMBER, 1933.

Year recommended.	Rehoused during					Total
	1929	1930	1931	1932	1933	
1929, ...	68	40	25	5	5	143
1930, ...	—	22	49	13	6	90
1931, ...	—	—	26	44	8	78
1932, ...	—	—	—	23	16	39
1933, ...	—	—	—	—	18	18
	68	62	100	85	53	368

RENT AND MORTGAGE INTEREST (RESTRICTIONS) ACTS, 1920, AND 1923.

Applications for Certificates by Tenants.—During the year 56 applications for certificates in terms of Section 2 (2) of the principal Act, were received, compared with 233 for 1932. Of these, 8 were refused and 48 granted, all in respect that the houses were not in a reasonable state of repair.

At a meeting of the Sub-Committee on Insanitary Areas on the 22nd August, 1932, it was resolved that in future, as regards houses which have “irremediable defects,” certificates be not issued, but that the necessary procedure be taken under Section 16 of the Housing (Scotland) Act, 1930, to have such houses closed.

The following summary shows the distribution of the applications throughout the several administrative divisions, and gives comparative figures for each year since the Act came into operation:—

GLASGOW, 1933.—APPLICATIONS FOR CERTIFICATES UNDER SECTION 16 (2) OF THE INCREASE OF RENT AND MORTGAGE INTEREST (RESTRICTIONS) ACT, 1920.

Division.	Refused.	Granted in respect that Houses were—	
		(1) Not in all respects reasonably fit for human habitation.	(2) Not in a reasonable state of repair.
Central, ...	—	—	2
Northern, ...	6	—	9
Eastern, ...	—	—	11
South-Eastern, ...	1	—	—
South-Western, ...	1	—	26
City, ...	8	—	48
		48	
1920 (Oct. to Dec.),	147	263	459
1921-1925, ...	219	434	653
1926-1930, ...	29	200	229
1931, ...	6	121	98
1932, ...	12	126	95
1933, ...	8	—	48

Applications for Reports by House Factors and Owners.—In Section 5 (2) of the 1923 Act it is provided that where a certificate has been issued by the Sanitary Authority in accordance with the provisions of Section 2 (2) of the principal Act of 1920, and the house factor or owner afterwards executes the repairs required to put their houses into a reasonable state of repair, he shall be entitled to receive a report to that effect on making application to the Sanitary Authority, and on payment of a fee of one shilling. During the year 13 applications were received, all of which were granted.

The following summary shows the distribution of the applications throughout the several administrative divisions, and gives comparative figures for previous years:—

GLASGOW, 1933.—APPLICATIONS FOR REPORTS BY HOUSE FACTORS OR OWNERS UNDER SECTION 5 (2) RENT AND MORTGAGE INTEREST (RESTRICTIONS) ACT, 1923.

Division.					Applications.	
					Granted.	Refused.
Central, ...	...	...	...	...	—	—
Northern, ...	...	...	...	...	1	—
Eastern, ...	...	...	...	...	9	—
South-Eastern, ...	...	...	...	...	—	—
South-Western, ...	...	...	...	...	3	—
					13	—
					13	
1923-1925, ...	...	...	...	...	40	1
1926-1930, ...	...	...	...	...	6	2
1931, ...	...	...	...	...	6	1
1932, ...	...	...	...	...	36	1
1933, ...	...	...	...	...	13	—

SECTION IX.

BACTERIOLOGICAL LABORATORY.

Report by Dr. W. R. WISEMAN, City Bacteriologist.

The specimens submitted and reported upon in 1933 numbered 42,459, the highest figure so far recorded in the annual returns of the laboratory. The figure for the previous year was 41,558. The summary at the end shows that the sources of the specimens were Public Health Department (23,643), Medical Practitioners (16,718), and Other Local Authorities (2,098). The category "Medical Practitioners" comprises private practitioners (the majority) and certain institutions of the City other than those of the Corporation, the specimens relating to the possibility of infectious disease. The nature of the work carried out is best seen by classifying it as follows:—

(1) *Specimens from Cases of Suspected Infectious Disease.*—These constitute the bulk of the routine work, and are submitted for diagnosis in relation to the various forms of tuberculosis, diphtheria, enterica fevers, dysentery, venereal diseases, ophthalmia neonatorum, scarlet and puerperal fever, various forms of meningitis, pneumonia, anthrax, plague (in rats), and undulant fever. The routine work also involves the examination of contacts and the investigation of possible sources of infection in connection with epidemic outbreaks of disease.

(2) *Miscellaneous Investigations.*—These differ from the preceding group in that no particular bacterial cause is suggested by the clinician. Many of them, therefore, call for general bacteriological scrutiny, and sometimes require extended work with repeated specimens. The materials are such as (a) intestinal contents and urine for evidence of infection of more unusual types; (b) foodstuffs as to fitness for consumption, or in connection with illness suspected to be related to their consumption, and cases of illness connected therewith; (c) skin, hair, &c., for parasites; (d) tissues for evidence of tumour formation or other change of structure; (e) blood and other materials for research in obscure cases.

(3) *Examination of Water and Milk Supplies.*—Samples of the City water supplies are taken at regular intervals from distributing pipes and from the Gorbals, Mugdock, and Craigmaddie reservoirs for examination of their bacterial content with respect to maintenance of their standard of purity. Analyses of the water in the ponds of the public baths are also made at regular intervals and reported to the Baths Department. Examination of the milk supply of the City and the City's hospitals constitutes a considerable part of the routine work of the laboratory. The supplies are tested in regard to bacterial content as a measure of purity and in regard to tuberculous infection.

(4) *Biological Tests.*—These tests are an essential part of the procedure in examining milk for the presence of the tubercle bacillus, and are commonly used for the detection of this organism in pleural and cerebro-spinal fluids, sputum, and urine. They are employed to distinguish the bovine from the human type of tubercle bacillus and to determine the type of infecting organism in cases of pneumonia in which the appropriate serum for treatment may be indicated by the information so derived. By means of such tests we ascertain the virulence or otherwise of organisms isolated from diphtheria patients, carriers, and contacts, and make the diagnosis of certain infections such as anthrax, infective jaundice, &c.

DIPHTHERIA.

Practitioners sending in swabs for diphtheria receive a fresh outfit along with every report. All reports are based upon microscopical examination of the cultures obtained from the swabs submitted. The results are conveyed by telephone on the morning after the swabs are received, this being followed up by the sending out of a written record of the examination.

During the year 10,126 swabs were examined for the presence of the diphtheria bacillus, and were derived from patients, from contacts, and from children as a preliminary to admission to the Corporation Country Homes.

(1) *Suspected Cases.*—8,351 swabs were examined, 1,199 being positive, or 14·3 per cent. This compares with 14 per cent. in 1932 and 14·6 per cent. in 1931.

(2) *Contacts.* — 1,292 contacts were examined, 60 being positive, or 4·6 per cent.

(3) *Pre-Admission Examinations.* — 483 swabs from 418 children were examined, with results as follows:—

		Number of Children.	Swabs.	Virulent B. diphtheriæ.	Per cent. virulence.
M.O.H.,	...	352	352	3	0·85
Practitioners, ...		66	131	—	—

Over the total number of children the percentage of virulent diphtheria bacilli was thus 0·7. The number 352 from the Health Department were throat swabs, while those from practitioners comprised 66 throat and 65 nasal swabs.

Biological and Cultural Tests.—These tests are applied for the purpose of ascertaining the virulence or otherwise of diphtheria-like organisms. Differentiating cultural tests are used to establish the identity of such an organism, particularly when it occurs in regions other than the throat, and if it happens to be *Bacillus diphtheriæ* the biological test is applied to establish its virulence or otherwise. During the year 205 such organisms were dealt with, involving 154 biological tests, while 51 were fixed up by cultural means alone. 104 were proved to be virulent and 50 non-virulent *B. diphtheriæ*. The sources and results were as follows:—

			Number tested.	Virulent.	Non-Virulent.
(a) Throat swabs,	...	...	48	32	16
(b) Nasal swabs,	...	...	104	55	49
(c) Eye swab, ...	...	...	1	1	—
(d) Vaginal swab,	...	...	1	1	—
(e) Ear swabs, ...	...	...	39	12	27
(f) Pre-admission swabs,	...	...	12	3	9
			<u>205</u>	<u>104</u>	<u>101</u>

The identity and source of the 101 non-virulent diphtheria-like organisms are seen in the following table:—

			B. diphtheriæ.	B. hofmanni.	B. xerosis.	Total.
Throat,	...	...	13	1	2	16
Nose, ...	...	...	25	18	6	49
Ear, ...	...	...	11	4	12	27
Pre-admission,	...	...	1	8	—	9
			<u>50</u>	<u>31</u>	<u>20</u>	<u>101</u>

The specimens subjected to biological tests as above were submitted from the following sources:—

			Virulent.	Non-virulent.
Corporation Fever Hospitals, ...	...	...	49	25
Medical Officer of Health, ...	...	...	19	10
Practitioners, ...	...	...	22	6
Ear, Nose, and Throat Hospital, ...	...	...	5	3
Other Hospitals, ...	...	...	9	6
			<hr/> 104 <hr/>	<hr/> 50 <hr/>

In view of recent work on the correlation of types of the diphtheria bacillus with clinical varieties of the disease, originating in Leeds and since carried out in London, Edinburgh, and other towns, over 500 cases of diphtheria have been analysed in this laboratory by Dr. H. S. Carter, and an account of the investigation published in the *Journal of Hygiene* in November, 1933. It was found that in Glasgow, where the variety of the disease is mild, the "intermediate" type of *B. diphtheria* predominates, and that *B. diphtheria mitis*, which causes the mildest form of the disease, accounts for many cases, while *B. diphtheria gravis*, which is associated with grave infections, is rare. The 500 Glasgow strains fell into the following categories:—

<i>B. diphtheria</i> <i>gravis</i> .	<i>B. diphtheria</i> intermediate type.	<i>B. diphtheria</i> <i>mitis</i> .
3·1 per cent.	59·2 per cent.	36·5 per cent.

The remaining 1·2 per cent. were aberrant forms of modified virulence. In Leeds, Hull, and Berlin recent figures show the incidence of the *gravis* type as 77·5, 59·4, and 43·4 per cent. respectively, with a corresponding mortality.

ENTERICA GROUP.

Examination of Blood.—Agglutination tests for the diagnosis of typhoid and paratyphoid fever were done with 300 specimens of blood from 294 persons.

SOURCES OF MATERIAL AND RESULTS IN BLOOD TESTS.

	Positive typhoid.	Positive para. B.	Doubtful.	Negative.	Total.
Cases of illness, ...	12	30	21	170	233
Contacts, ...	1	2	—	32	35
Hawkhead Hospital, ...	13	—	2	17	32
	<hr/> 26 <hr/>	<hr/> 32 <hr/>	<hr/> 23 <hr/>	<hr/> 219 <hr/>	<hr/> 300 <hr/>

The 13 Hawkhead reactions were weak positives, probably indicating previous infection, as in no instance was the organism found in the excretions. Half of the 23 doubtfuls gave reactions to more than one organism, and, with them all, other methods of diagnosis were employed.

Many of these examinations are made for the satisfaction of excluding enterica infection.

Examination of Excretions.—The total number of specimens examined from cases, convalescents, contacts, and carriers was 2,250 (fæces, 1,188; urines, 1,062), of which 523 were repeats. Contacts account for about half this total and were much in excess of last year's number. The positive results in the total number of specimens were:—

				Positive B. typhosus.	Positive B para. B.
Fæces,	...	...	...	12	140
Urine,	...	...	...	5	89
				<hr/> 17	<hr/> 229
				<hr/>	<hr/>

(1) *Typhoid Findings.*—The 17 positives were from 8 patients, 3 contacts, and 4 carriers. Of these carriers, 3 are chronic and 1 was discovered this year.

(2) *Paratyphoid Findings.*—The 229 positives were from 53 cases of the disease, 28 contacts, and 2 chronic carriers. Some of these patients were not clear until after some months, and one contact remained positive for some time.

Conformably to previous years, a survey was made of 53 patients in Hawkhead Mental Hospital with regard to typhoid infection, 120 specimens being examined. Four patients were found to be excreting *B. typhosus* in the stools. Two of these four had been positive and two negative in 1931, while other seven persons positive in 1931 were now negative as regards the presence of the organism. All urines were negative on two examinations.

TUBERCULOSIS—HUMAN.

Specimens of sputum in suspected cases of pulmonary tuberculosis were examined as to the presence of the tubercle bacillus for medical practitioners and for the medical officers in charge of the tuberculosis dispensaries of the City. The medical practitioners submitted 2,506 specimens, while 2,654 were reported upon to the Health Department.

Other suspected material such as urine, cerebro-spinal and pleural fluids, pus from gland abscesses, fæces—196 specimens—were reported upon, largely by means of biological tests.

DYSENTERY AND FOOD POISONING.

Dysentery.—As in previous years, specimens are not infrequently submitted to be examined for “dysentery and enterica infections,” and occasionally for “dysentery and food-poisoning organisms.” To avoid duplication these specimens are included here when they proved negative for the enterica and food-poisoning groups of organisms. In the course of the year material was submitted from 380 persons, and entailed 491 examinations, including the usual repeat specimens for clearance. None of the cases became a carrier, and in only 4 cases were dysentery organisms found on a second examination. The sources of the materials and the findings are seen in the following table:—

	B. Flexner.	B. Sonne.	E. histolytica.	Total.
Practitioners, ...	14	7	—	96
M.O.H. (suspected cases), ...	5	11	—	102
M.O.H. (contacts), ...	10	2	—	53
Corporation hospitals, ...	15	26	—	240
	<hr/> 44	<hr/> 46	<hr/> —	<hr/> 491
Total for 1932, ...	74	25	3	662
„ „ 1931, ...	46	9	4	378

The rise in number of Sonne infections over these years is seen. The 44 Flexner results were from 42 cases, and the 46 Sonnes from 44 cases. Early in the year there was a small outbreak of Flexner dysentery in the Western District Hospital. The causative organism—*B. dysenteriae* Flexner Z—was found in 3 specimens of fæces, while 5 specimens of blood sera gave positive agglutination results, other 2 being doubtful. Eleven sera were negative. The outbreak did not spread.

Food Poisoning.—To be noted here are several cases of illness which proved to be infections caused by the dysentery bacillus of Sonne, but which appeared to be due to the consumption of ice-cream, and were therefore examined as probable cases of food poisoning. With regard to foodstuffs, various samples were examined either as to fitness for human consumption or as coming under suspicion of causing illness. Such samples included sausage, tinned salmon, mutton pies, tunny fish, chocolate creams, frozen egg mixture, and shellfish.

The following 104 specimens were submitted from 70 patients suffering from illness thought to be attributable to food-poisoning organisms:—

	Food poisoning organisms present.	Repeat positive.	Total.
Fæces, ...	15	3	96
Urine, ...	1	—	5
Vomitus, ...	—	—	1
Blood serum, ...	—	—	2

These figures exclude the cases of Sonne dysentery associated with ice-cream.

The principal features of the outbreaks were briefly as follows:—

(1) A series of illnesses among children appeared to be related to the consumption of ice-cream. Eleven were examined and the dysentery bacillus of Sonne was isolated from the stools of eight of them, including a child of the ice-cream maker, none of whose family was taken ill. It must be noted that very many children and adults partook of ice-cream from this particular dealer during this period without ill effects. No specimen of ice-cream was submitted to the laboratory.

(2) Of a family of 9 adults, 5 were affected by illness, the suspected food being tinned salmon sandwiches. From the stools of 3 of the patients the causative organism was isolated. It closely resembled *Salmonella artrycke*.

(3) A *Salmonella* organism resembling the *Newport* type was obtained from the stools of a child who had suddenly sickened. No particular foodstuff was implicated. This case was unusual in that the organism was still present after four weeks of illness. Recovery followed in eight weeks.

(4) A food-poisoning organism of the *Salmonella* group was isolated from four members of a family who were taken ill after eating sausage. Unfortunately none of the sausage was available for examination.

(5) In an outbreak of gastro-intestinal illness at Oakbank Hospital, which was limited to one ward of 25 persons, 14 persons were affected. The cause was found by the isolation of *Salmonella artrycke* from 8 of the patients. The outbreak was mild and did not spread.

VENEREAL DISEASES.

The number of specimens examined in 1933 in connection with venereal diseases was 18,860. This total includes 11,339 specimens of blood and 286 cerebro-spinal fluids subjected to the Wassermann Test, and 6,095 to the Kahn Precipitation Test. Many of these specimens, as occasion required, were examined by both methods and were thus reported. The total also includes 1,125 specimens of exudate examined for the presence of *Gonococcus* and 10 smears for *Treponema pallidum*. Towards the end of the year the Colloidal Gold Test was introduced for the examination of the cerebro-spinal fluids.

Wassermann Test.—This test is used as an aid in the diagnosis of syphilis and to assist in determining the results of treatment. The method employed is based on No. 1 Method M.R.C. (Modified), 1929, coupled with certain modifications introduced by Dr. E. J. Wyler in 1932 and published in a report by the Ministry of Health (Reports on Public Health and Medical subjects, No. 67). The sources of the specimens for this test were as follows:—

Public Health Department,	5,285
Medical Practitioners of the City,	1,704
Outside Local Authorities,	1,190
Local Hospitals and Institutions,	3,446
	<hr/>
	11,625
	<hr/>

4,665 of these were from patients undergoing treatment (49·1 per cent. positive). 6,960 were submitted for diagnosis (20·3 per cent. positive).

Kahn Test.—The great majority of the specimens subjected in the first instance to the Kahn Test were from cases which showed no clinical evidence of syphilis, the test being performed as a routine in connection with patients attending Ante-natal Clinics, the Clinic for the Blind, the V.D. Dispensaries for the treatment of gonorrhœa only, the Maternity Ward of the Southern General Hospital, and for other purposes.

The results obtained from the 6,093 specimens done by the Kahn Test may be set out as follows:—

	Ante-natal Clinics.	Clinic for the Blind.	Gonorrhœa Cases.	Hospitals &c.
Number,	3,938	548	1,253	354
Per cent. positive,	3·2	11·1	3·6	4·7

These percentages are on the basis of positive results given in both Wassermann and Kahn Tests.

Examination for Treponema pallidum (V.D.S.).—The majority of the specimens submitted for this microscopical examination leave much to be desired in their preparation. The organism was not observed in the 10 specimens examined.

Examination for Gonococcus (V.D.G.).—Specimens numbering 1,125 were examined from cases other than ophthalmia neonatorum. Those for diagnosis gave a positive percentage of 19·1, while 15·8 is the corresponding figure for patients undergoing treatment.

The following table shows in detail the sources of all the above materials and the tests which were applied:—

	Wassermann Test.	Kahn Test.	V.D.G. micros.	V.D.S. micros.	Colloidal Gold Test.	Total.
<i>I. Public Health Department—</i>						
Blind Clinic, Tuberculosis Dispensary,	127	548	—	—	—	675
V.D. Dispensaries (five), ...	3,936	1,253	—	1	—	5,190
Ante-natal Clinics (nine), ...	221	3,938	348	—	—	4,507
Hospitals, Fever (six), ...	309	354	70	1	3	737
„ General (two), ...	692	—	—	1	—	693
	5,285	6,093	418	3	3	11,802
<i>II. Medical Practitioners—</i>						
(a) City of Glasgow, ...	1,704	2	662	7	—	2,375
(b) Other Local Authorities,	1,190	—	37	—	2	1,229
	2,894	2	699	7	2	3,604
<i>III. Local Institutions—</i>						
Lock Hospital,	731	—	3	—	—	734
Ear, Nose, & Throat Hospital,	139	—	—	—	—	139
Samaritan Hospital, ...	40	—	—	—	—	40
Cancer Hospital,	60	—	—	—	—	60
Redlands & Elder Hospitals,	20	—	1	—	—	21
Sick Children's Hospital, ...	264	—	3	—	—	267
Sick Children's Dispensary,	418	—	—	—	—	418
Victoria Infirmary,	23	—	—	—	—	23
Bellahouston Dispensary (Victoria Infirmary), ...	126	—	—	—	—	126
Glasgow Eye Infirmary, ...	1,475	—	—	—	—	1,475
West of Scotland Research Institute,	144	—	1	—	—	145
Other Institutions,	6	—	—	—	—	6
	3,446	—	8	—	—	3,454
Total,	11,625	6,095	1,125	10	5	18,860

OPHTHALMIA NEONATORUM.

Specimens of exudate from the eyes of 979 suspected cases of ophthalmia neonatorum were examined for the Child Welfare Centres, &c. Since repeated examinations are occasionally made to test the results of treatment, the number stated does not correspond to the actual number of cases:—

Specimens from	Number.	Positive.
Medical Practitioners,	11	1
Medical Officer of Health, ...	966	44
Outside Authorities,	2	—
	979	45

The positive results refer to the presence of the gonococcus.

The organisms observed microscopically in these specimens are described and reported, as far as possible, to the clinicians in order to assist in correlating different types of ophthalmia.

STREPTOCOCCAL INFECTIONS.

SCARLET FEVER, &C.

An outbreak of scarlet fever in the Maryhill district, associated with the milk supply of a certain farm, was investigated during the year. Samples of milk from two cows were found to be infected with hæmolytic streptococci, and swabs from teats of these cows yielded the same organisms on examination. The work involved the examination of 77 swabs from various sources, with the detection of hæmolytic streptococci in 17 instances. These 17 included the farmer and his wife, a milker, and a milk carrier. An interesting feature of the outbreak was the occurrence of erysipelas in 23 persons; in 7 of these hæmolytic streptococci were found in the throat. Another outbreak of scarlet fever occurred in a nursing home. 58 swabs from contacts were examined, giving 5 positive results, three of the nurses being positive.

In all 280 swabs from scarlet fever contacts were dealt with, and in addition 40 specimens from miscellaneous diseases, e.g., mastoiditis and otitis media. Of these, 94 were reported positive.

In connection with puerperal fever 115 cultures of swabs and of blood were carried out, with 15 positive results.

The sources of the specimens were as follows:—

	Health Dept.	Medical Practs.	Ear, Nose, & Throat Hosp.	Outside Authorities.
Scarlet Fever, &c., ...	241	42	18	19
Puerperal Fever, ...	76	1	—	38
	317	43	18	57

ANTHRAX.

During the year 88 samples of goatskin thongs used in binding orange boxes and 24 specimens of salted hides were examined biologically for the presence of the anthrax bacillus. These are examined in small groups according to source. Five such groups of samples consigned from Alcira and Carcagente were found to be infected with the organism. All the salted hides proved negative. Six samples of miscellaneous materials from a cargo of bones (including bones, dried skin, and hair) and two specimens of pus from suspected human cases of anthrax were examined, with negative findings. No case of the disease was seen in the laboratory this year.

PLAGUE.

Since plague-infected rats are the reservoir from which plague may be conveyed by the bite of rat fleas, the examination of rats from ships and from the harbour forms part of the routine work of the laboratory. During the year 283 rats were examined for evidence of this infection, with negative results. The species of rats were *Mus decumanus* (57), *Mus rattus* (91), and *Mus alexandrinus* (135). The proportion of males to females was 115 to 168.

MILK SUPPLY.

I. IN RELATION TO BOVINE TUBERCULOSIS.

All reports as to whether samples of milk contain tubercle bacilli are based on the results of biological tests. This year 868 samples were reported upon, and the following were the results obtained:—

	Samples.	Tuberculous.	% Tuberculous.
1. <i>Milk from Town Cows</i> —			
Submitted by the Veterinary Surgeon,	58	6	10·3
2. <i>City Milk Supply</i> —			
Obtained by milk and dairy inspectors at consignees' premises—	310	25	8·06
3. <i>Pasteurised Milk</i> —			
Supplied to the Child Welfare Centres,	48	1*	2·08
4. <i>Hospital Milk Supply</i> —			
These are all Grade A (T.T.) Milks.	206	—	nil.
5. <i>Other Local Authorities</i> ,	246	24	9·7

* In connection with the sample of pasteurised milk which gave a positive result, the pasteurising plant was found to have a defective valve.

The above figures refer to examinations completed, not to the date of submission of samples, within the year.

II. IN RELATION TO BACTERIAL CONTENT.

City Milks.—Milks coming into the City are examined for the number of bacteria they contain per unit volume of one cubic centimetre. They are sampled mainly at consignees' premises. During the year 308 samples were estimated in this way in the laboratory, as against 277 in the previous year. The results obtained in 1933 and in the previous year may be placed together for comparison, as follows:—

	Number examined.	Samples below maximum of Certified Milk (30,000 per c.c.).	Samples below maximum of Grade A Milk. (200,000 per c.c.).	Samples above 200,000 per c.c.
1932,	277	74 (27%)	121 (44%)	82 (29%)
1933,	308	94 (31%)	121 (39%)	93 (30%)

The actual averages of bacterial counts of samples of City milks in 1933 are presented in the following table as indicating degrees of purity of production:—

Total number of samples examined=308.

Maximum counts at 37°C. of designated milks (given as a basis for comparison).	Average counts at 37°C. and number of samples involved.
Below 30,000 per c.c. (Certified),	16,509 per c.c. for 94 samples=31%
Below 200,000 per c.c. (Grade A),	80,102 per c.c. for 121 samples=39%
Above 200,000 per c.c.	308,440 per c.c. for 38 samples=12%
	773,522 per c.c. for 11 samples= 4%
	Over a million per c.c. for 44 samples=14%

Thus 70 per cent. of the supplies are of Grade A or Certified standard as to count, as compared with 71 per cent. in 1932.

Child Welfare Milk.—52 samples of milk supplied to Child Welfare Centres were examined at weekly intervals. In two cases only did the bacterial count exceed that allowed for pasteurised milk (viz., 100,000 per c.c.). The average count for 52 samples was 29,460 per c.c.

Hospital Milk.—The City hospitals are supplied with milk designated as Grade A (T.T.). Estimations of the bacterial content are made fortnightly for ten hospitals. The average counts for all these hospitals fall well within the 200,000 mark allowed for milk of the grade supplied.

Designated Milk.—In addition to the samples already dealt with, 379 samples of designated or graded milks were examined for the Health Department. Of these, 351 were found to give less than the maximum count for their grade, while 28 exceeded it. The details are subjoined:—

	Samples.	Within maximum count.	Over maximum count.
Certified,	97	92	5
Grade A (Pasteurised),	25	25	—
Pasteurised,	38	37	1
Grade A,	12	12	—
Grade A (T.T.), ...	207	185	22
	<hr/> 379	<hr/> 351	<hr/> 28 (7·5%)
1932,	369	347	22 (6%)

The relative maximum bacterial counts for these grades are appended:—Certified and Grade A (Pasteurised), each 30,000 per c.c.; Grade A and Grade A (T.T.), each 200,000 per c.c.; Pasteurised, 100,000 per c.c.

LOCH KATRINE WATER SUPPLY.

Four samples from Craigmaddie, Mugdock, and Gorbals Reservoirs and two from the tap are examined every month as to purity and bacterial content. The bacterial content remains fairly constant and is satisfactory. The following are the quarterly averages for 1933:—

		Average Count on agar per c.c.	Average Count on gelatin per c.c.
January—March, ...	...	9	36
April—June, ...	...	6.5	44
July—September, ...	...	6	61
October—December, ...	...	9	52

B. coli communis was present in 10 c.c. and absent in 5 c.c. of the tap water on one occasion in July.

HISTOLOGICAL EXAMINATION OF TISSUES.

Specimens of tissues were submitted for report upon changes of structure as observed by microscopical examination of thin sections. Some were of the nature of tumours, while others were for evidence of tuberculosis or other change, and 3 were *post-mortem* specimens. In all, 10 specimens were examined during the year.

EXAMINATION OF DISINFECTANTS.

Fifteen samples of disinfectants were submitted by the Health Department for the determination of their germicidal power. The method employed is a modification of the Rideal-Walker technique as embodied in Act No. 13, 1929, of the Department of Public Health of South Africa relative to Food, Drugs, and Disinfectants.

BIOLOGICAL LABORATORY.

Some of the commoner infections requiring biological tests were mentioned at the beginning of this Report. In 1933 these tests numbered 1,433.

VISITORS TO THE LABORATORY.

In the course of the year the laboratory has been visited on many occasions by medical practitioners of the City. Such visits are welcomed on account of the mutual help that accrues. There have also been visitors from abroad who have been interested in the facilities provided and the methods adopted in the laboratory. The work of the laboratory was discussed and demonstrations given in connection with visits from the Bridgeton Rover Scouts and the Loyal Order of Ancient Shepherds (Glasgow District).

SUMMARY OF EXAMINATIONS FOR THE
YEAR 1933.

The examinations performed in the bacteriological laboratory during 1933 numbered 42,459, as compared with 41,558 in the previous year. The sources of materials submitted were as follows:—

	Medical Practs.	Health Dept.	Other Local Auths.
Tuberculosis (Human)—			
Microscopical Examination—			
Sputum,	2,397	2,654	106
Urine,... ..	37	49	9
Pus,	14	45	3
Cerebro-spinal fluid,	4	4	1
Pleural effusion,	6	7	4
Fæces,	5	3	2
Swabs,	1	2	—
Biological Test,	55	109	13
Tuberculosis (Bovine)—			
Milk—			
Microscopical Examination,	—	59	8
Biological Test—			
Town Cows,	—	58	—
City Milk Supplies,	—	310	—
Child Welfare Milk Supplies,	—	48	—
Samples from Hospital Milk Supply,	—	206	—
Miscellaneous Sources,	—	—	246
Tuberculosis (Avian)—			
Microscopical Examination—			
Fowls,	—	8	—
Typhoid and Paratyphoid Fever—			
Blood (agglutination),	114	144	42
Urine, fæces (cultures),	124	2,080	46
Dysentery—			
Fæces,	52	395	44
Blood,	—	22	—
Sputum 1, milk 1,	1	1	—
Diphtheria—			
Throat swabs from suspected cases,	7,574	578	199
„ „ „ contacts,	—	1,292	—
Virulence Tests,	39	136	30
Pre-admission Swabs,	131	352	—
Vincent's Angina—			
Throat swabs from suspected cases,	63	5	5
	10,617	8,567	758

	Medical Practs.	Health Dept.	Other Local Auths.
Cerebro-spinal Fever—			
Post-nasal swabs,	10	6	—
Pneumococcus and B. influenzae—			
Sputum and pus,	4	—	3
Scarlet Fever, &c.—			
Cultural tests for hæmolytic streptococci,	61	317	57
Staphylococcal Infection—			
Throat and nose swabs from cases and contacts,	—	179	—
Streptococcal and Pneumococcal Infection—			
Swabs,	—	12	—
Ophthalmia Neonatorum,	11	966	2
Venereal Diseases—			
Wassermann Test,	5,148	5,285	1,192
Kahn Test—Ante-natal, &c., ...	2	6,093	—
Colloidal Gold Test,	—	3	2
Gonococcal Infections other than Ophthalmia Neonatorum,	670	418	37
Treponema pallidum,	7	3	—
Anthrax—			
Goatskin bindings of orange boxes, ...	—	88	—
Salted Ox-hides,	—	24	—
Bones and Hair,	—	6	—
Pus 1, swab 1,	2	—	—
Plague—			
Examination of Rats from Ships, Docks, and City,	—	283	—
Infective Jaundice—			
Material from patients,	—	6	—
Malaria—			
Blood,	5	—	—
Bacterial Diagnosis (various diseases)—			
Urine 70, pus 26, cerebro-spinal fluid 24, swabs 14, fæces 8, mis- cellaneous 23,	105	57	3
Food-Poisoning Organisms—			
Examination of Food-stuffs,	2	17	—
Material from patients,	20	81	3
	6,047	13,844	1,299

			Medical Practs.	Health Dept.	Other Local Auths.
Water—Ships, household, &c.					
Analyses,	—	9	4		
Milk (Bacterial Content)—					
Under Milk (Special Designations)					
Order,	—	379	—		
City Milk Supply,	—	360	—		
Hospital Milk Supply,	—	204	—		
Miscellaneous Sources,	3	6	28		
Blood—					
Blood Counts,	5	—	—		
Cytological examination by smears, ...	10	1	1		
By Culture,	9	6	3		
Pernicious Anæmia,	3	—	—		
Occult Blood—					
Fæces,	1	—	—		
Undulant Fever—					
Blood,	10	10	3		
Histological Examination—					
Tumours and Tissues for Malignancy, &c., including P.M. specimens, ...	6	3	1		
Parasites—					
Fæces, Skin, &c.,	3	3	—		
Chemical Examination—					
Urine,	—	22	—		
Preparation of Vaccine,	4	3	—		
Typhus—					
Serum Test (Weil-Felix),	—	1	—		
Identification of Insects,	—	1	—		
Actinomycosis—					
Pus,	—	—	1		
Disinfectants, for Coefficient,	—	15	—		
	16,718	23,434	2,098		
		42,250			
Water Department—					
Tap Water,	24				
Reservoirs,	48				
	—	72			
Baths Department—					
Water from Swimming Ponds,		137			
		42,459			

W. R. WISEMAN.

SECTION X.

FOOD.

FOOD POISONING, INFECTIONS, &c.

Numerous cases of alleged food poisoning are brought to the notice of the Department, although it is not always possible to establish the cause of the illness. This may be due to the difficulties of obtaining samples of the remains of the various foodstuffs consumed.

The following are notes on the cases investigated during 1933:—

March.—A woman of 32 years suffered from symptoms of mild gastro-intestinal disturbance within two hours of eating a portion of steak pie. On removal of the crust, the underlying contents were seen to be covered in places with a fair amount of mould. Judging from the extent of the mould, the opinion was held that the pie was about seven days old. The consumption of a portion of a pie in this condition would quite well account for the symptoms exhibited.

March.—Three persons are said to have complained of sickness ten minutes after consumption of coffee. A fourth person complained of headache on the following day. Vomiting, pain, and diarrhoea were absent. All were well on the day following the consumption of the coffee and fit to go about.

Illness following the Consumption of Oatmeal infested with Insects.—A family, consisting of husband, wife, and two children, partook of porridge on the 29th March made from oatmeal in which caterpillars and a winged insect were afterwards discovered. When the husband saw the caterpillars, which was about five hours after taking the porridge, he vomited, and his wife vomited three or four times during the night. The Bacteriologist's report was as follows:—"Meal moths and pupæ present in the meal."

April.—Four persons in a doctor's household suffered from symptoms of gastro-intestinal disturbance after eating tongue. The symptoms in one case began two hours after partaking of the tongue. About 12 hours afterwards three other persons in the household were attacked by severe abdominal pain and

diarrhœa. The acute symptoms lasted for 24 hours, but all were ill for some time afterwards. One of the patients developed a distinctly yellow tinge in the sclerotics and the urine was very highly coloured. Bacteriological examination of a sample of the tongue on 13th April was negative.

July.—Four mild cases of food poisoning sickened on 11th July, and in three of them the principal symptom was diarrhœa, lasting two to three days. In the fourth there was no diarrhœa, but only sickness. From the three cases suffering from diarrhœa a salmonella organism of the food-poisoning type was recovered from the stools. The illnesses were probably due to the consumption of a boiled sausage on 7th July. No portion of the sausage was available for examination.

On 21st July three boys, who had eaten the seeds from laburnum pods, were immediately afterwards seized with abdominal pain and vomiting. The illness lasted five or six hours.

August.—On the 16th August a boy complained of sickness shortly after eating sweets (marshmallows), which were subsequently found to be contaminated with small beetles and larvæ (*ptinus tectus*).

On 25th August 12 cases of mild Sonne dysentery among children of two to thirteen years of age originated from the consumption of ice-cream, of which all had partaken. One member of the Italian dealer's family was found to have suffered from what was probably a very mild attack of Sonne dysentery. The intervals between the dates on which the ice-cream was consumed and the times of sickening varied. In seven of the cases bacillus dysenteriae (Sonne) was found.

September.—In the Kingston district, towards the end of September, 17 persons living in adjacent tenement properties suffered from symptoms of gastro-intestinal disturbance after consuming cooked beetroot sold by an itinerant vendor. Three of those affected were children. The symptoms were sickness, vomiting, abdominal pain, and diarrhœa. All the cases were mild. The vendor used returned jam jars purchased from grocers as containers. No organisms of the food-poisoning or dysentery groups were found, and specimens of the beetroot examined for organisms were negative. Samples of the beetroot and of the acetic acid in which it was preserved were analysed chemically, with negative results.

Between 6th and 8th September two Italian families, one consisting of six persons and the other of three, suffered from symptoms of gastro-intestinal disturbance and "redness of the

skin " shortly after eating cooked tunny fish. No significant findings were made on laboratory examination of the cooked fish nor on examination of specimens of the *faeces* from the affected individuals.

One member of a household of two partook of salmon and shrimp paste from a metal-topped glass jar one evening about six o'clock, and suffered during the next day from vomiting and diarrhoea. One examination of the stools was made, with negative result. Numerous organisms regarded as contaminants (some colon bacilli, but chiefly spore-bearing bacilli) were recovered from the bottom of the opened jar. An unopened jar from the same consignment was submitted to the laboratory for bacteriological examination, with negative results.

October.—A family, consisting of five individuals, suffered from symptoms of gastro-intestinal disturbance of a mild type after eating a new type of loaf. Examinations of *faeces* from all the individuals were negative, and no evidence was found that the loaf was the cause of the disturbance.

December.—A woman suffered from abdominal pain and vomiting after eating tinned salmon. The illness was mild and of short duration. A sample of the salmon had an oily and rather nauseating odour, and no pathogenic organisms were isolated.

The following notes are submitted by the Senior Food Inspector:—

SUMMARY OF OPERATIONS UNDER THE FOOD AND DRUGS (ADULTERATION) ACT; THE MILK AND DAIRIES ACTS; THE MERCHANDISE MARKS ACTS; AND ALLIED ACTS AND ORDERS FOR THE YEAR ENDING 31ST DECEMBER, 1933.

The Food and Drugs (Adulteration) Act.—In terms of the Act, 4,966 samples were procured and examined, 3,591 of which were informal and 1,375 statutory. Of these, 207 and 86 respectively were subsequently certified as non-genuine, and proceedings instituted in connection with 60 of the latter. In 54 of these convictions were subsequently obtained, in two warranty defences were sustained, in two proceedings were withdrawn and expenses paid, in one the case was dismissed, and in one the diet was deserted *simpliciter*, respondent having died. In addition, there were five prosecutions in respect of failure to display name and address on vehicle from which milk was being sold, and in each a conviction was obtained. The total fines and expenses imposed under the above Act amounted to £158 5s. 6d. Several minor contraventions of the margarine provisions of the Act were noted and the dealers warned.

ABSTRACT OF TOTAL SAMPLES EXAMINED DURING 1933.

Article.	Informal.		Statutory.		Percentage adulterated.		Percentage of Samples taken in each Group to Total.	
	Taken.	Non-Gen.	Taken.	Non-Gen.	Infor.	Stat.	Infor.	Stat.
Milk and Cream, ...	2,037	75	820	12	3.68	1.46	56.7	59.6
Milk Products (Butter, Cheese, &c.), ...	190	1	51	1	0.53	1.96	5.3	3.7
Meats, and Meat Food Products, ...	291	58	166	51	19.93	30.72	8.1	12.1
Cereals, &c., ...	45	1	68	—	2.22	—	1.3	4.9
Spirituuous Liquors, ...	238	42	31	9	17.65	29.03	6.6	2.3
Drugs, ...	295	21	60	9	7.12	15.00	8.2	4.4
Flavourings and Condiments, ...	144	—	78	—	—	—	4.0	5.7
Miscellaneous Foods, &c., ...	351	9	101	4	2.56	3.96	9.8	7.3
	3,591	207	1,375	86	5.76	6.25	100.0	100.0

ABSTRACT OF INFORMAL AND STATUTORY SAMPLES OF SWEET MILK EXAMINED DURING 1933.

Informal.				Month.	Statutory.			
No. exam-ined.	No. pre-sumed Non-Gen.	Average per-centage Composition.			No. exam-ined.	No. pre-sumed Non-Gen.	Average per-centage Composition.	
		Fat. %	Non-Fat. %				Fat. %	Non-Fat. %
168	8	3.59	8.70	January,	64	2	3.50	8.69
134	7	3.61	8.71	February,	72	1	3.61	8.63
171	6	3.58	8.73	March,	66	—	3.58	8.64
151	10	3.57	8.65	April,	66	1	3.60	8.55
159	10	3.62	8.66	May,	63	3	3.55	8.54
147	3	3.58	8.72	June,	70	1	3.59	8.74
144	3	3.56	8.60	July,	60	—	3.60	8.57
198	2	3.76	8.66	August,	68	—	3.69	8.61
161	6	3.64	8.65	September,	73	—	3.68	8.64
159	4	3.80	8.70	October,	72	1	3.74	8.62
190	7	3.78	8.71	November,	70	1	3.82	8.63
141	3	3.63	8.77	December,	70	1	3.65	8.68

Food Standards.—A Committee on Food Standards was appointed by the Ministry of Health on 4th June, 1931, but was subsequently suspended on economic and other grounds. It has now been resuscitated with amended terms of reference, viz.:—“To consider whether it is desirable that the law relating to the composition and description of articles of food should be altered so as to enable definitions or standards to be prescribed, or declarations of compositions to be required, for articles of food other than liquid milk; and, if so, to recommend what alterations of the law are required.” The Report of this committee may be looked for at an early date.

Drugs.—Several samples examined since the new British Pharmacopœia came fully into operation reveal that drugs are still being compounded in terms of the old Pharmacopœia, or not fully in compliance with the new. While the correctness of prescribing is governed by successive editions of the Pharmacopœia, it was, however, considered that in the absence of undue material or therapeutic prejudice a warning would, in the meantime, suffice.

As an example, the examination of samples of extract of malt and extract of malt with cod liver oil may be quoted, in which the protein contents of the malt extract were found to be materially low as compared with the British Pharmacopœia requirements of at least 4·5 per cent. In addition they were found to possess no diastatic power which, while not provided for in the British Pharmacopœia, should be present in malt extract. From enquiries made, the possible causes of these deficiencies would appear to be due to faulty or careless methods in the manufacture of the malt extract. In its preparation, the malted barley is converted into the "mash" by maceration in water for several hours, and is thereafter, with the further addition of water at 86°F., maintained at a temperature which should not exceed 130°F. for one hour to ensure the maximum conversion of starch into sugar. The liquor is then filtered, and thereafter concentrated by evaporation in vacuum pans, again at a temperature not exceeding 130°F. It is possible that deficiency in diastatic power may be due to overheating during this process.

Artificial Cream Act, 1929.—Examination of samples of cream did not disclose any contraventions of the Act, and there are no premises which fall to be registered with the Food and Drugs Authority in terms of the Act.

Lead in Canned Sardines.—Attention was directed by the Department of Health to the possible presence of lead in sardines. Examination of different brands—17 samples in all—disclosed the presence of lead, the proportion ranging from 2·5 to 24·4 parts per million. When the proportion of lead in any canned foodstuffs approximates to 20 parts per million, it is invariably deemed to be potentially dangerous to health. The presence of lead is doubtless due to the method of closure of the tins, which is usually effected with ordinary solder (containing lead), whereas the use of pure tin would avoid any such possibility. The Department suggested that it would suffice for the present to warn importers, and thus afford them an opportunity for such remedial action as would ensure the absence of lead in future packs. As it is the practice in the trade to store canned sardines for long periods, i.e., two to four years, some considerable time will elapse ere any change due to the method of packing will

be apparent. Packers have under consideration at present a new type of tin which is seamless and non-soldered.

Mint containing Foreign Leaves.—A somewhat unusual form of adulteration was disclosed as the result of examination of samples of dried mint. From a microscopical examination, a number of these were found to contain extraneous ailanthus leaves, colloquially known as “the tree of heaven.” the proportion in some instances being as high as 40 per cent. These leaves are devoid of any active principle, i.e., the essential oil to which mint owes its culinary properties. The mint was believed to be imported, and adulteration effected before it reached this country. All stocks, as far as could be ascertained, were subsequently withdrawn from sale.

Preserves.—Samples of jam are still occasionally found which do not conform to the minimum standard adopted in the Jam Section of the Food Manufacturers’ Federation, viz., 68·5 per cent. of total soluble solids, i.e., that portion of the fruit soluble in water, plus sugar. Representations hitherto made have secured the installation, where absent, of refractometers and the testing of each “boiling.” It has been found, however, that where the refraction reading was satisfactory a reading on the following day might show a decrease approximating to three per cent. This is explained by the fact that, where fruit has a relatively high acidity, and a low-boiling temperature is employed, a tendency develops for the berries to “weep,” as colloquially called, and to exude a proportion of their natural moisture thus reducing the percentage of total soluble solids present. The obvious remedies have been adopted by the manufacturers in question, with satisfactory results.

Preservatives, &c., in Food.—Further approaches have been made by interested bodies to the Department of Health for the relaxation of the Regulations precluding the use of boric acid in cream, but without success. After the lapse of more than a year, during which all samples of cream were free from preservatives, four samples were found to contain boric acid ranging from 0·12 to 0·66 per cent. These had a common source in Northern Ireland where the Preservatives, &c., in Food Regulations (Northern Ireland), 1927, have never functioned. Respondent showed that he had obtained the supplies in good faith and with a warranty, which, in terms of Sections 2 and 27 of the Milk and Dairies (Scotland) Act, 1914, he was unable to rely on; and as the actual delinquents were outwith the jurisdiction of the court, the diet was deserted on respondent’s undertaking to discontinue supplies from Northern Ireland. The circumstances were reported to the Department of Health. Subsequently, the Regulations referred to were made operative as from 1st July, 1933.

Seedless grapes in syrup, described as "rubyettes" and "emrelettes," imported from California, were found to contain 404 and 509 parts respectively of benzoic acid per million. As the latter is a prescribed preservative for foodstuffs of this nature, further sales were stopped, and Article 11 applied, which requires re-exportation or the use of stocks as ship's stores. This latter course was adopted.

Butchers continue to be the chief offenders under these Regulations. They would appear to regard prosecution for this class of offence as part of their business risk and expenses, and the addition of "Madam Rachael" to meat "that is ready to perish" as being worth while, until more salutary penalties are imposed. During 1933 there were 38 prosecutions of this nature, compared with 31 in the previous year.

Appended is table of samples in which preservatives were found, together with their nature and amount.

ABSTRACT OF ARTICLES OF FOOD IN WHICH PRESERVATIVES, &C., WERE FOUND, AND THE NATURE AND AMOUNT DURING YEAR ENDING 31ST DECEMBER, 1933.

Nature of Article.	Number examined.	Number in which Preservatives, &c., were found.	Nature of Preservative, &c.	Parts per Million.	
				Lowest.	Highest.
Apricots (Dried),	... 21	20	Sulphur dioxide,	140	1,484
Beer,	... 2	2	" "	10	10
Candied Peel,	... 17	1	" "		25
Cherries, Glace,	... 10	1	" "		19
Cider,	... 4	4	" "	12·8	38·4
Cornflour,	... 9	1	" "		25
Cream,	... 47	4	Boric acid,	0·12%	0·66%
Custard Powder,	... 4	1	Sulphur dioxide,		19
Fruit Salad,	... 7	6	" "	12	502
Gelatine,	... 1	1	" "		320
Grapes, Seedless (Bottled),	... 2	2	Benzoic acid,	464	509
Meat Paste,	... 15	1	Sulphur dioxide,		26
Mince,	... 245	123	" "	9	2,846
Mineral Waters,	... 4	1	Benzoic acid,		89
Preserves,	... 47	26	Sulphur dioxide,	3	57·6
Sauce, Tomato,	... 7	2	Benzoic acid,	60	138
Sausage Meat,	... 12	11	Sulphur dioxide,	41	480
Sausages,	... 28	28	" "	32	871
Sugar, Demerara,	... 6	1	" "		19
Sultanas,	... 39	20	" "	19	300
Treacle,	... 1	1	" "	Trace	
Wines, Alcoholic,	... 19	8	" "	44·8	172
Wines, Non-Alcoholic,	18 {	6	" "	52	165
		10	Benzoic acid,	220	600
565		281			

Milk (Special Designations) Order (Scotland), 1930.—The details of licences in force at the end of 1933 and the approximate daily gallonage distributed, with comparative figures for the two previous years, are as under:—

Certified—						1933	1932	1931
Producers,	...	...	...	...	...	—	—	—
Dealers,	...	...	...	...	...	74	64	56
Total Average Daily Sales (Gallons),						161	166	158

Grade “ A ” (Tuberculin Tested)—

Producers,	...	...	...	...	...	—	—	—
Bottling Establishments,	...	...	...	...	...	3	3	3
Dealers,	...	...	...	...	...	318	314	313
Total Average Daily Sales (Gallons),						959	1,102	1,067

Grade “ A ”—

Producers,	...	...	...	...	...	—	—	—
Bottling Establishments,	...	...	...	...	...	1	1	1
Dealers,	...	...	...	...	...	60	58	57
Total Average Daily Sales (Gallons),						*268	†298	‡386

Pasteurised—

Pasteurising Establishments,	...	...	...	...	...	3	3	2
Dealers,	...	...	...	...	...	25	22	23
Total Average Daily Sales (Gallons),						1,244	1,212	1,177

* 250 gallons pasteurised. † 280 gallons pasteurised. ‡ 375 gallons pasteurised.

Note.—The gallonage is exclusive of supplies to institutions and of pasteurised milk not described or sold as such.

During the year a total of 379 samples of designated milk as sold within the city were procured and examined as to their conformity with the above Order. A tabular statement of the results is appended.

RESULTS OF EXAMINATIONS OF DESIGNATED MILKS.

Designation and Requirements.	Bacteriological Examination.								Chemical Examination.			
	Number examined.	Number conform. to count and coliform requirements.	Number exceeding count only.	Number exceeding count and having coliforms present.	Number conform. to count but with coliforms present.	Agar count per c.c.		Presence of Coliforms.		Fat Minimum (3.5%).		
						Lowest.	Highest.	-	+	Number at or above.	Number below.	Average Fat Content. %
CERTIFIED— Bacteria not to exceed 30,000; Coliform absent in 1/10 c.c.; Fat not less than 3.5%, ...	97	86	2	3	6	600	1 over million	88	9	92	5	3.99
GRADE "A" (Tuberculin tested)— Bacteria not to exceed 200,000; Coliform absent in 1/11 c.c.; Fat not less than 3.5%, ...	206	156	7	15	28	600	1 over million	163	43	186	20	3.93
GRADE "A"— Requirements are as for Grade "A" (Tub- erculin Tested), ...	12	12	—	—	—	3,050	118,750	12	—	11	1	3.70
GRADE "A" (Pasteur- ised)— Requirements are as for "Certified," ...	26	25	—	1	—	100	56,900	25	1	26	—	3.82
ASTEURISED— Bacteria not to exceed 100,000. ...	38	24	—	*1	*13	200	1 over million	24	14	†38	—	3.67

† Fat minimum, 3.0 per cent.

* No coliform test prescribed.

The foregoing table shows that 80 per cent. were fully conform as regards bacterial count and coliform requirements, as against 82 per cent. in 1932, and in relation to fat content 93 per cent., compared with 92 per cent. in the previous year. There was one prosecution only under the Order in respect of the unlicensed sale of designated milk, in which a fine of £2 was imposed.

Designated Milk Supplies to Corporation Hospitals.—All hospitals, &c., under the control of the Public Health Department

continue to receive Grade "A" (Tuberculin Tested) supplies, the total average daily quantity being approximately 1,600 gallons. Of 198 samples examined as to their compliance with the grade, 169, or 85 per cent., were found satisfactory as regards bacterial count and coliform requirements. 601 samples were examined as to their fat content, and 555, or 92 per cent., contained the required 3·5 per cent. or more, the average fat content, exclusive of three obviously super-fatted samples, being 3·90 per cent. Of 202 samples examined for tubercle bacilli, two were found positive, being the morning and evening milks of one supply. An immediate inspection and retesting of the herd were made, and twelve cows found to react. One sample taken from these animals was positive on microscopic examination and the cow dealt with under the Tuberculosis Order, the others being removed from the herd.

Tubercle in Ordinary Market Milk.—307 composite samples of milk as received by city dairymen from farmers outwith the city and before treatment were examined for tubercle bacilli. Of these, 23 were found positive, or 7·5 per cent., as against 8·7 per cent. in 1932. In practically every instance one or more affected cows were found and dealt with under the Tuberculosis Order in the producing County area.

An instance of recurring infection amongst milch cows is afforded by a series of samples obtained from one particular consignment, where over a period four out of six samples were found positive. On each occasion an affected animal (on one occasion two) was found in the herd. In all, five cows, or 30 per cent., of the herd were removed and slaughtered over the period, suggestive of a general infection of the herd or the premises.

Appended is a table showing the incidence of the tubercle bacilli in samples examined during the past three years, arranged in counties:—

SAMPLES OF FARMERS' SUPPLIES EXAMINED FOR PRESENCE OF TUBERCLE BACILLI.

County.	1931		1932		1933	
	No. Examined.	No. Tuberculous.	No. Examined.	No. Tuberculous.	No. Examined.	No. Tuberculous.
Ayr, ...	105	14	134	18	130	10
Dunbarton, ...	9	1	5	1	4	—
Dumfries, ...	6	—	1	—	—	—
Kirkcudbright, ...	—	—	4	—	—	—
Lanark, ...	110	16	121	6	119	11
Renfrew, ...	52	5	39	4	11	—
Stirling, ...	19	4	8	—	43	2
Totals, ...	301	40	312	29	307	23

Bacterial Counts of Ordinary Market Milk.—The above samples, and one from a city farm supply (308 in all), were in addition examined as to cleanliness, i.e., bacterial content. The following table shows the results:—

Number examined.	Average number of bacteria per c.c.					Coliforms in 1/100 c.c. (2 days).	
	Under 100,000	100,000 to 200,000	200,000 to 500,000	500,000 to 1,000,000	Over 1,000,000	—	+
308	178	36	39	11	44	166	142

The above table shows that 69·5 per cent. were, in relation to bacterial count, equivalent to Grade "A" quality, as compared with 70·4 per cent. in 1932. Of the 178 samples with less than 100,000 bacteria per c.c. (57·8 per cent. as against 54 per cent. in the previous year) 93 of these, or 52·2 per cent., were of certified quality, compared with 48·7 per cent. in 1932. As regards coliforms in 1/100th c.c., these were absent in 53·9 per cent. of the total samples examined, compared with 48·7 per cent. in 1932. While further progress toward a uniformly high standard of cleanliness in production is desirable, these results cannot be deemed unsatisfactory, keeping in view the dry and warm weather prevailing during several months. Enquiry in an adjacent large producing county area into causes of prevailing high counts showed that these were attributable to (1) poor standard of methods, (2) many minor failures to comply with bye-laws, (3) insufficient sterilisation of utensils, (4) inadequate equipment generally, and (5) shortage of water supply. Flies, owing to the abnormally dry and hot summer, have been exceptionally prevalent, and these as a contributing factor to the presence of coliform bacilli are not fully realised by many producers; this is amenable to simple expedients.

Condensed and Dried Milks.—Thirty-six samples of condensed milk, as defined by the Regulations, were informally procured and analysed. Of these, 18 were machine-skimmed (sweetened), 7 full-cream (sweetened), and 11 evaporated (unsweetened). With one exception, all were found in compliance with the Regulations. A sample of evaporated (unsweetened), the product of a creamery in an adjoining county, was wrongly labelled, and also contained only 8·46 per cent. of fatty solids and 28·85 per cent. of total milk solids, whereas a minimum of 9 per cent. and 31 per cent. respectively is exacted. In terms of Article 9, the facts were communicated to the local authority of the area, and all stocks, as far as could be ascertained, withdrawn from sale. Increasing difficulties were experienced in obtaining samples of dried milks, but five samples of different brands were procured and analysed, all of which were found to conform with the standards.

Merchandise Marks Acts and Orders.—In all, there were 25 prosecutions for failure to display an indication of origin, ten in relation to butter, thirteen to tomatoes, and two to apples. A conviction in each case was obtained, and penalties, amounting to £17 in all, were imposed.

In relation to the Butter Marking Order, as referred to in the Report for 1932, there is reason to believe that, not infrequently, so-called blenders of butter are exploiting the option allowed, as regards the indication of origin, in Article 5, Sub-section (e), viz., “including imported butter.” This is in almost universal use, and conveys to the consumer an inaccurate indication of the actual nature and origin of the commodity. For instance, a butter blender, in one case, mixed a “straight” foreign butter with one to two per cent. of home butter. The purchaser cannot be expected to realise that “including” in reality means 98·9 per cent.; the word is thus wholly misleading and an abuse of the wording of the section. It is feared that “straight” foreign butter without any admixture of home produce is also thus described in the pre-packed outputs of these establishments. In the enabling Act (Section 10, Sub-section 1), the “indication of origin” is definitely required to be “Foreign” or “Empire,” or, alternatively, the country in which the commodity is produced. On the other hand, Sub-section 2 cuts right across this in that it enacts that, where an Order deals with blends or mixtures, the indication of origin may be in such form as the Order prescribes. Despite this latitude, option (e) in Article 5 of the Order would appear at least to be *prima facie* contrary to the spirit of the Act, and a further example of where subordinate legislation issued by departments under enabling Acts has not always had regard to its practical application and its potentialities for abuse. The facts as narrated have been brought to the notice of the Central Authority.

Registration of Butter Factories, &c.—Two applications for registration under Section 8 of the Food and Drugs Act were received—one for premises to be used as a “butter factory” and one in respect of wholesale dealing in margarine. Both were found to conform with the statute and certificates subsequently granted.

The usual inspection of butter factories was maintained, but no irregularities were noted, and all samples procured therein were also found to be genuine. The nature and number of premises which, in terms of Section 8, were on the Register at end of year, are as under:—

Manufactories of margarine,	1
Wholesale dealers in margarine,	253
Manufactories of milk-blended butter,	—
Butter factories,	23

Fertilisers and Feeding-Stuffs Act, 1926.—No occasion for formal sampling arose during the year, but 43 samples of a variety of feeding-stuffs in common use were informally obtained and submitted to the Agricultural Analyst. With two exceptions, all were found to conform to requirements. One sample described as concentrated dry feed was found materially in excess of its declared fibre content, probably due to the mechanical nature of the mixture. The other, a sample of cooked flake maize, contained a smaller percentage of oil than was declared. In both instances, the sellers and buyers were advised of the analyses. A slackness on the part of sellers to furnish buyers with the "statutory statement" in terms of the Act was again noted, and, in view of warnings given, the question of proceedings will arise.

Food Inspections, &c.—A total of 13,647 inspections in relation to foodstuffs were made in markets, shops, and stores, and nearly 167 tons of a variety of foodstuffs was condemned by the inspectors on various grounds as unfit for human consumption. The details are contained in the appendices.

A more than usual prevalence of insect infestation of foodstuffs was a feature of the year, possibly due to the exceptional drought and high temperatures prevailing during 1933. The following may be enumerated:—(1) *Tyroglyphus farinae* in semolina; (2) *Ptinus tectus* in almonds; (3) *Sitophilus oryzae* in lentils; (4) *Niptus hololeucus* in haricot beans; and (5) *Phytophthora infestans* (common blight), in potatoes. In each instance, their satisfactory disposal and the disinfection of containers, &c., were effected.

In terms of the storage of meat food products provisions of the Public Health (Meat) Regulations, 1932, one application for certification was received and granted, after certain alterations to the premises. The number of such premises on the register at the end of the year was 10, and in respect of these 48 certified copy certificates in connection with vehicular sales were issued. These premises were duly inspected at irregular intervals, and conditions found satisfactory.

The lack of powers to supervise adequately the production, storage, distribution, and exposure for sale of foodstuffs is a defect in food law; suasion, tact, or even bluff are proving more and more inadequate. In connection with 11 premises, various improvements in sanitary conditions and otherwise were effected. A form of trading in foodstuffs, described as the "serve yourself method," has been inaugurated by a firm of bakers in their shop in the central area. Bakers' boards containing tea-bread and pastry are freely exposed in open racks. Customers are supplied

with metal trays and help themselves, the goods chosen being subsequently checked and placed in boxes by attendants. From observations, it was noted that the cakes, pastries, &c., were contaminated by drippings from customers' sleeves on wet days; that cakes were handled by gloved or soiled hands and were not infrequently replaced in lieu of others. Owing to the crowding of the premises, the atmosphere to which these goods are exposed is, in addition, at times fetid, and there does not appear to be any provision enabling these conditions to be dealt with.

Milk and Dairies (Scotland) Order, 1925.—The provisions of this Order continue to be enforced, but its limitations in several respects have been felt and brought to the notice of the Department of Health. Article 12, dealing with the use of milk bottles by persons other than owner, is now being successfully undertaken by private prosecutions at the instance of the Trade Association as "aggrieved persons" in terms of the Merchandise Marks Act, 1887. Occasion for three prosecutions under the Order arose during the year, two in respect of transferring milk from one vessel to another in other than dairy premises, and one of storing milk and milk vessels in stable premises, fines of £8 in all being imposed.

Dairies.—In terms of the Milk and Dairies (Scotland) Act, 1914, there was a total of 1,834 dairies within the meaning of the Act on the register at the end of the year, compared with 1,759 in 1932, being an increase of 75. Of these, 573 were in respect of limited registration, i.e., restricted to the reception and sale of bottled milk only, as against 468 in 1932, an increase of 115. Inspections in connection with the Act totalled 23,270, and 56 infringements of the Act or bye-laws were noted, in 15 of which proceedings were taken. Nine of the latter were in respect of non-registration, three of failing to keep the milk vehicle thoroughly clean, two of bottling milk elsewhere than in dairy premises, and one of leaving milk vessels on footpath. Convictions, with one exception, were obtained, and penalties of £15 10s. in all imposed.

The Scottish Milk Marketing Scheme (Approval) Order, 1933, came into force on 1st December. One of the first effects was to increase the sale of loose milk as against bottled milk, owing to the fact that the half-pint bottled milk cost the consumer one farthing more than a similar quantity of milk sold loose.*

* This anomaly has now been rectified as from 1st May, 1934, the two prices being now the same, whether loose or bottled.

Byres.—There are 51 byres within the city area as against 53 in 1932, and with one exception all are provided with grazing facilities. In terms of the bye-laws, accommodation is provided for 1,159 cows, and the average number kept is 922. Inspections as to maintenance methods and equipment totalled 452. Several minor breaches of bye-laws were noted and received attention. Considerable repairs and improvements were effected in connection with nine farms during the year.

Ice-cream Shops.—The number of premises in which ice-cream is manufactured or sold was 574 at the end of the year, as against 587 in 1932, a decrease of 13. Inspections in connection therewith totalled 8,174. While this trade is practically in the hands of aliens, they are as a class very amenable to control. Nine minor breaches of the bye-laws were noted, and four of repairs or improvements required, all of which received due attention. There was one prosecution in respect of the occupancy of unregistered and unsuitable premises, for which a penalty of £1 was imposed.

A. B. FINDLAY,
Senior Food Inspector.

22nd March, 1934.

THE FOOD AND DRUGS (ADULTERATION) ACT, 1928.

TABLE SHOWING NATURE AND NUMBER OF TOTAL SAMPLES
PROCURED AND EXAMINED DURING 1933.

Nature of Sample.	Informal.		Statutory.		Nature of Sample.	Informal.		Statutory.	
	Number taken.	Number non-genuine.	Number taken.	Number non-genuine.		Number taken.	Number non-genuine.	Number taken.	Number non-genuine.
Acetic Acid, ...	1	—	—	—	Cake, bakers', ...	4	—	—	—
Almonds, ground, ...	13	—	3	—	Candied Peel, ...	12	—	5	—
Ammoniated Tincture of Quinine, ...	4	—	—	—	Cheese, ...	33	—	15	—
Apricots, dried, ...	16	—	5	—	Cherries, preserved, ...	9	—	1	—
Arrowroot, ...	1	—	6	—	Cider, ...	4	—	—	—
Aspirin Tablets, ...	4	—	—	—	Cinnamon, ground, ...	31	—	17	—
Bacon, ...	2	—	4	—	Cocoa, ...	11	—	—	—
Baking Powder, ...	—	—	2	—	Coffee, ...	40	—	14	1
Barley, ...	6	—	15	—	Cornflour, ...	5	—	4	—
Beer, ...	2	—	—	—	Cream, ...	45	4	2	1
Boric Acid	—	—	—	—	Cream, canned, ...	7	—	—	—
Powder, ...	4	—	2	—	Cream of Tartar, ...	13	—	12	—
Borax, ...	6	—	4	—	Currants, ...	27	—	11	—
Borax Honey, ...	4	—	—	—	Custard Powder, ...	3	—	1	—
Brandy, ...	5	—	—	—	Dates, ...	2	—	—	—
Butter, ...	147	1	36	1	Dripping, ...	36	—	13	1
Buttermilk, ...	2	—	—	—	Easton's Syrup, ...	6	1	1	—
					Essence of Rennet, ...	9	—	—	—

Nature of Sample.	Informal.		Statutory.		Nature of Sample.	Informal.		Statutory.	
	Number taken.	Number non-genuine.	Number taken.	Number non-genuine.		Number taken.	Number non-genuine.	Number taken.	Number non-genuine.
Extract of Malt,	6	2	2	2	Milk Dried, full-				
Extract of Malt,					cream, and				
with cod liver					virol, ... 1	—	—	—	—
oil, ... 6	6	2	2	2	Mince, ... 139	56	106	47	
Extract of Malt,					Mince-meat, ... 11	—	—	—	
with cod liver					Mint, ... 6	3	5	3	
oil and chemical					Mineral Water, ... 4	—	—	—	
food, ... 1	1	—	—	—	Mustard, ... 11	—	6	—	
Farola, ... 1	1	—	—	—	Oat Flour, ... 1	—	—	—	
Figs, ... 3	3	—	1	—	Oatmeal, ... 2	—	—	—	
Fish Paste, ... 4	4	—	—	—	Oil, almond, ... 40	4	3	1	
Flour, ... 1	1	—	1	—	camphorated, 19	—	2	—	
Flour, self-raising, 3	3	—	12	—	castor, ... 1	—	—	—	
Flowers of Sulphur, 4	4	—	4	—	cod liver, ... 18	1	4	—	
Fruit Salad, dried, 3	3	—	4	—	eucalyptus, ... 12	—	2	—	
Gelatine, ... 1	1	—	—	—	olive, ... 17	—	—	—	
Gin, ... 12	12	3	—	—	Oil of Aniseed, ... 4	—	—	—	
Ginger, ground, ... 33	33	—	22	—	Oil of Lemon, ... 4	—	—	—	
Ginger Wine					Ointments, various, 15	1	—	—	
Essence, ... 1	1	—	—	—	Orange Crush, ... 1	—	—	—	
Glycerine of Borax, 4	4	2	2	1	Parrish's Food, ... 6	—	—	—	
Golden Syrup, ... 1	1	—	—	—	Pears, canned, ... 11	—	—	—	
Grapes in Syrup					Peaches, canned, 1	—	—	—	
(Bottled), ... 2	2	2	—	—	Pears, canned, ... 1	—	—	—	
Gregory's Powder, 11	11	—	2	—	Pepper, black, ... 13	—	5	—	
Ham, ... 1	1	—	—	—	white, ... 52	—	23	—	
Health Salts, ... 1	1	—	2	—	Preserves, ... 46	3	1	—	
Honey, ... 2	2	—	—	—	Prunes, ... 21	—	10	—	
Ice Cream, ... 3	3	—	—	—	Raisins, ... 5	—	2	—	
Ice Cream Powder, 4	4	—	—	—	Raspberries, canned, 1	—	—	—	
Lard, ... 29	29	—	12	—	Rice, ground and				
Lemon Cheese or					whole, ... 13	—	16	—	
Curd, ... 7	7	—	1	—	Rice Flour, ... 2	—	3	—	
Lentils, ... 2	2	—	—	—	Rum, ... 24	1	—	—	
Linseed Meal, ... 35	35	4	10	2	Sardines, ... 17	1	—	—	
Liquorice Powder					Salts, medicinal, 6	—	—	—	
Compound, ... 8	8	—	—	—	Sauces, various, ... 7	—	—	—	
Margarine, ... 2	2	—	17	—	Sausages, ... 9	1	19	2	
Meat, glassed, ... 1	1	—	—	—	Sausage Meat, ... 4	—	8	1	
Meat, potted, ... 36	36	—	—	—	Semolina, ... 7	1	—	—	
Meat Paste, ... 15	15	1	—	—	Strawberries,				
Milk, skimmed, ... 14	14	—	4	—	canned, ... 1	—	—	—	
Milk, sweet, 1,935	1,935	70	814	11	Sugars, various, ... 3	—	3	—	
" condensed,					Suet, shredded, ... 4	—	4	—	
full-cream					Sultanas, ... 26	—	13	—	
(sweetened), 7	7	—	—	—	Sweet Spirit of				
" Condensed,					Nitro, ... 2	—	—	—	
full-cream,					Tapioca, ... 2	—	11	—	
evaporated					Tartaric Acid, ... 8	—	2	—	
(unsweetened), 11	11	1	—	—	Tincture of Iodine, 26	4	6	1	
" Condensed,					Tomatoes, canned, 6	—	—	—	
machine-					Treacle, ... 1	—	—	—	
skimmed					Tripe, ... 3	—	—	—	
(sweetened), 18	18	—	—	—	Vinegar, ... 4	—	5	—	
" Dried, full-					Whisky, ... 172	38	31	9	
cream, ... 3	3	—	—	—	Wines, alcoholic, 19	—	—	—	
" Dried, full-					" non-alcoholic, 18	—	—	—	
cream									
(modified), 1	1	—	—	—	Totals,	3,591	207 1,375	86	

THE FOOD AND DRUGS (ADULTERATION) ACT, 1928.

*Details of Samples in which Proceedings were instituted
during 1933.*

Number of com- plaints.	Nature of sample and alleged offence.	Number of con- victions.	Amount of fines imposed.	Number dismissed or found "not proven."	Number deserted simpli- citer.	Number with- drawn and expenses paid.	Amount of expenses paid.
			£ s. d.				£ s. d.
1	<i>Almond Oil</i> —Consisted of oil derived from the kernels of peach or apricot stones,	1	1 6 9	—	—	—	—
1	<i>Coffee</i> —Contained chicory,	1	2 0 0	—	—	—	—
1	<i>Cream</i> —Contained boric acid,	—	—	—	—	1	1 5 0
1	<i>Dripping</i> —Contained fats of veget- able origin,	1	2 10 0	—	—	—	—
1	<i>Glycerine of Borax</i> —Deficient in borax,	1	2 0 0	—	—	—	—
2	<i>Linseed Meal</i> —Deficient in fixed oil,	1	2 5 9	1	—	—	—
5	<i>Milk</i> —Failing to have name and address on vehicle,	5	2 10 0	—	—	—	—
3	<i>Milk (Sweet)</i> —Deficient in milk fat,	3	24 0 0	—	—	—	—
1	<i>Milk (Sweet)</i> —Deficient in milk solids other than fat,	1	4 0 0	—	—	—	—
16	<i>Mince</i> —Contained sulphite preserva- tives during proscribed period,	35	90 13 6	1	—	—	—
1	<i>Mince</i> —Contained excess of sulphite preservatives during permitted period,	1	3 0 0	—	—	—	—
3	<i>Mint</i> —Contained extraneous leaves,	2	2 13 6	1	—	—	—
1	<i>Sausages</i> —Contained excess of sul- phite preservatives,	1	3 0 0	—	—	—	—
1	<i>Tincture of Iodine</i> —Deficient in potas- sium iodide,	—	—	—	—	1	1 1 0
7	<i>Whisky</i> —Contained excess water,	6	16 0 0	—	1	—	—
5		59	155 19 6	3	1	2	2 6 0

ABSTRACT OF PROCEEDINGS UNDER OTHER THAN THE FOOD AND DRUGS ACT.

Nature of alleged offence.	Number of com- plaints.	Number of con- victions.	Amount of fines imposed.	Number dismissed or found "not proven."
			£ s. d.	
Merchandise Marks Acts and Orders—				
Imported raw tomatoes—failing to label with indication of origin,	13	13	6 10 0	—
Imported butter—failing to label with indica- tion of origin,	10	10	9 10 0	—
Imported fresh apples—failing to label with indication of origin,	2	2	1 0 0	—
Milk and Dairies (Scotland) Act, 1914—				
Failing to register as a dairyman,	9	9	9 0 0	—
Glasgow Corporation Order, 1919—				
Failing to register as a dealer in ice cream, ...	1	1	1 0 0	—
Milk and Dairies (Amendment) Act, 1922—				
Selling designated milk without a licence, ...	1	1	2 0 0	—
Milk and Dairies (Scotland) Order, 1925—				
Transferring milk from one vessel to another elsewhere than in dairy premises,	2	2	3 0 0	—
Storing milk and vessels in a place where same were liable to be contaminated,	1	1	5 0 0	—
Dairy Bye-laws—				
Failing to keep milk vehicle thoroughly clean,	3	3	4 10 0	—
Bottling milk elsewhere than milk store or bottling room,	2	1	2 0 0	1
Leaving milk vessels on footpath,	1	1	Admonished	—
Totals,	45	44	43 10 0	1

SECTION XI.

AIR PURIFICATION.

Increasing attention is being directed to the study of atmospheric pollution, and during the past five or six years certain records have been collected by the Department in association with Mr. F. W. Harris, the Corporation Chemist. The maintenance of accurate records for comparison over periods of years is a matter of importance. For instance, questions have recently arisen regarding the intensity and frequency of fogs during the present and past years, and comparisons have had to be based largely on personal recollection. It is thought that a definite change has taken place in the nature of fog during recent years in the large industrial towns in England, and that it nowadays takes the form of an overhead smoke pall, while streets and buildings remain comparatively clear. This type of fog has been observed in Glasgow, and it is now probably more frequent than it was at the beginning of the present century, but without accurate records demonstration is difficult. Measured by the standard scale of shades, there has been a reduction in fogs, especially during the past four years. Factors entering into the reduction in fog density are improved methods of combustion adopted in many industrial processes. On the other hand, there is the influence of the increasing size of the City and the greater amount of domestic smoke. Changes for the better have occurred irrespective of meteorological conditions.

Since the middle of 1929 the influence of atmospheric impurities has been measured in an indirect manner by recording ultra-violet radiation at certain sites in the centre of the City and at Robroyston Hospital on the outskirts of the City. Unfortunately, certain of the hospital records are unreliable, as the methylene-blue used was, on several occasions, too dark in colour and did not show accurately the fading required for comparison with the standard shades. Other measurements, however, are of considerable interest. These records were taken at St. Andrew's Hall and at Glasgow Cross Station where observations were made by the Staff of the Chemical Department

on an apparatus placed on the top of the building in which the laboratories are situated. These sites are representative of conditions in the centre of the City, and are about one mile distant.

A chart has been prepared on which the observations are plotted out, along with the hours of bright sunshine as recorded each month at Springburn Park. From these monthly tabular records, it will be observed that there is a tendency for the highest totals of units of fading to occur in July despite the fact that the greatest number of hours of sunshine usually occurs during June. The lines shown in the chart indicate the coincidence of ultra-violet radiation in relation to the hours of bright sunshine.

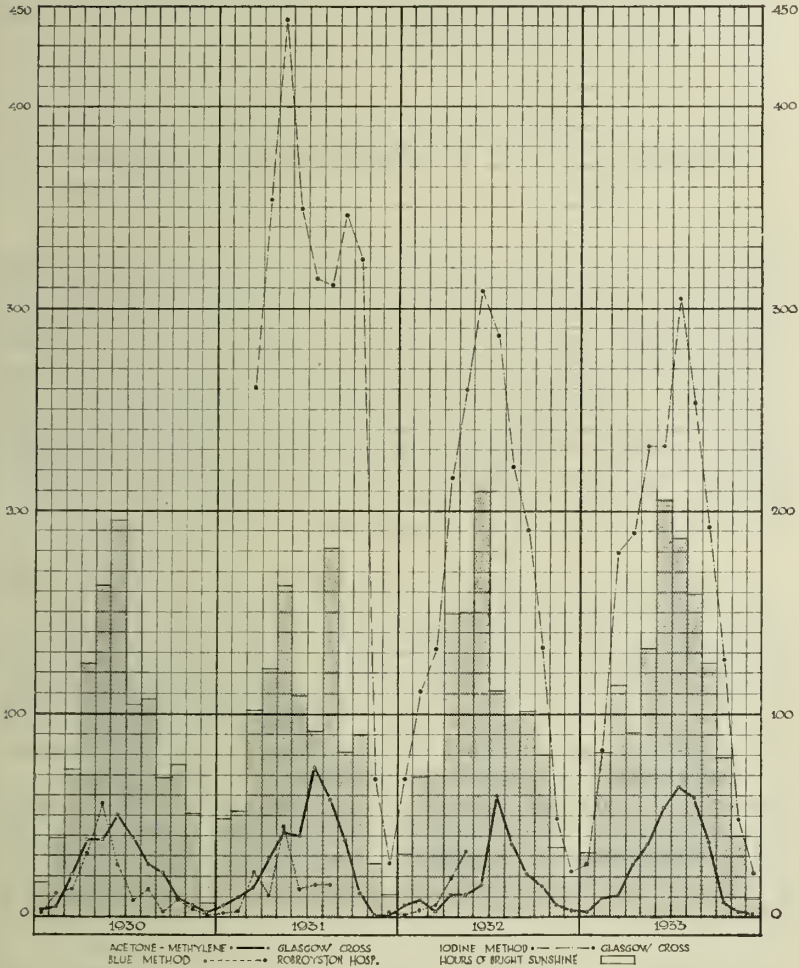
The records taken at Robroyston Hospital, apart from those which were discarded because of unreliability, correspond more or less with those taken in the centre of the City. The units registered in 1933 are in conformity with the greater number of hours of bright sunshine recorded (see Table IV in Appendix), a year which was one of the most favourable since the beginning of the present century. For instance, there were only 203 wet days, which may be taken as a measure of the brightness or rather absence of cloud, i.e., allowing the maximum penetration of rays of short wave-length. Another point of importance is the comparatively small amount of ultra-violet radiation which is recorded during the winter months in this latitude.

Records by means of the iodine method have also been added to the chart, and the curve of observations shows some degree of correspondence with the methylene-blue records and the hours of bright sunshine. It is doubtful whether the readings taken by the iodine method are comparable with those taken when methylene-blue is used, as it is stated that the former records both ultra-violet rays and visible rays. The unit is entirely different, so that the curve of the records cannot be compared in the diagram reproduced because the same scale is used for all measurements. These records were submitted to Dr. Leonard Hill, who made the following comments:—

“To take accurate readings by the methylene-blue method, readings should be taken in a standard glass tube (supplied by the makers) as well as in the standard quartz tube, and the glass reading deducted from the quartz. This is because acetone-methylene-blue is acted on by visible rays to a certain extent. Your Glasgow readings will, of course, be made lower still. The method gives the biologically active ultra-violet rays there at the extreme

end of the sun's spectrum, which produce vitamin D and sunburn and are cut out by smoke and haze. The hours of sunshine do not give a measure of these rays. The sun may be bright and hazy and scarcely any come through. Readings in big cities are then very low even in summer,

GLASGOW: CHART SHOWING UNITS OF ULTRA VIOLET RAYS BY
(1) ACETONE-METHYLENE BLUE & (2) IODINE METHODS, & HOURS
OF BRIGHT SUNSHINE RECORDED MONTHLY DURING YEARS 1930-1933.



except on clear windy days. I would advise you to go on with the records, because they really show the biologically active ultra-violet rays. There was a time when the makers sent out a 'slow' bottle of standard solution to some stations.

The error has been stopped. It would be interesting to take both the iodine and the methylene-blue readings. All readings are low in the north compared with the south coast."

As suggested by Dr. Leonard Hill, the enquiries are being continued, and in place of the observation station at Robroyston Hospital, which lies to the north-east of the City and in the direction of the prevailing winds, the *locus* has been changed to Mearnskirk Hospital, about seven miles to the south and four or five miles outwith the City.

MEASUREMENT OF ULTRA-VIOLET RAYS.

By Mr. F. W. Harris, Corporation Chemist.

The measure of the ultra-violet rays which penetrate through Glasgow's smoke-laden atmosphere has been recorded daily since July, 1929. The method followed is known as the acetone-methylene-blue method, carried out under the standardised conditions formulated by Webster, Leonard Hill, and Eidinow ("Lancet," 1924, page 745). This purely arbitrary method is founded on the bleaching of a solution of methylene-blue by the products of the decomposition of acetone, which chemical reaction is directly proportionate to the activity of the ultra-violet rays.

A quantity of the standard solution placed in a quartz tube is exposed on the roof at 20 Trongate, and after an exposure of 24 hours its depth of colour is compared with a series of standards and the bleaching effect produced expressed in empirical units. A few months after measurements of the intensity of the ultra-violet rays became a daily routine at 20 Trongate, it was decided to widen the field of observation. Through the co-operation of the Public Health Department, and later of the Halls Department, measurements have been daily recorded at both Robroyston Hospital and St. Andrew's Hall. It had been intended to make a record showing the comparison of the intensity of the ultra-violet rays recorded at Robroyston and the centre of the City.

This intention was not given effect to because of the difference in the dates on which ultra-violet rays were measureable at Glasgow Cross and at Robroyston. The differences were entirely attributed to variations in the atmospheric conditions prevailing at these two sites. I offered the further explanation

that the differences may in part be due to failure to recognise the limitations of the method and to credit it with a delicacy which is not justifiable.

My assistant, Mr. W. M. Cameron, has been most assiduous in his efforts to present the results of the daily measurement of the intensity of the ultra-violet rays in an interesting form. As the results are largely negative in character, this task has not been an easy one. Many forms of tabulated statements have been evolved and extracts from the daily meteorological notes published by the Air Ministry incorporated. These extracts, however, have proved of little value, and experience has clearly demonstrated that the most important factors influencing the intensity of the ultra-violet rays are the season of the year and the constantly changing density of the smoke haze which overhangs the City.

It will be observed from the tables detailing the results of the daily observations made at 20 Trongate since July, 1929, that the maximum intensity of the ultra-violet rays recorded, namely, 5 to 5.5 units on the empirical scale, occurred on only seven days. Three of these days were in July, 1929, one in August, 1929, and the other three days of maximum intensity in July, 1933. The visibility—a measure of the freedom from smoke-haze—was on the days of maximum intensity recorded during July, 1933, exceptionally good. As evidence of the exceptional visibility on these days, I may state that through the window of my room the flagpole at Queen's Park could be distinctly seen.

The density of smoke-haze must, therefore, have been at its minimum, so that 5 to 5.5 units on the empirical scale may be accepted as representing the maximum possible intensity of the ultra-violet rays in Glasgow.

It is interesting to note that Gillan and Morton in their paper on the "Comparison of Certain Methods for Determining the Ultra-Violet Intensity of a Light Source" state that it is only rarely that the bleaching of the methylene-blue will exceed 7 units on the arbitrary scale in a single English summer day, although 23 units have been recorded in the Alps. If we accept 5 units as representing the maximum intensity of ultra-violet rays possible in Glasgow under present-day conditions, and assume, for comparative purposes, that this intensity could be consistently maintained throughout a summer month of, say, 30 days, the monthly total number of units recorded would be 150.

In one of the appended tables is summarised the results obtained at Trongate, St. Andrew's Hall, and Robroyston Hospital in the form of monthly averages and total number of units recorded for each month. The lowness of the latter figures, even during the summer months, and the marked differences that frequently occur between the total monthly units recorded at Trongate and at St. Andrew's Hall afford striking evidence of the effectiveness of the barrier to the ultra-violet rays presented by smoke pollution.

As Mr. Cameron points out in his notes, the acetone-methylene-blue method suffers from two defects—its want of delicacy and the negative character of the results obtained, particularly throughout the winter months. It was therefore decided to carry out comparative tests with the iodine method of Bering-Meyer. This method measures the strength, or more correctly, the chemical activity of sunlight, and it is the method which was described by the Manchester Air Analysis Committee in 1924.

Estimations of the chemical activity of sunlight by the iodine method have been made daily at 20 Trongate since March, 1931. A measured quantity of the solution of potassium iodide acidified with sulphuric acid, contained in a stoppered quartz flask, is exposed in the same place and for the same time as the quartz tube containing the acetone-methylene-blue solution. Though the photo-chemical liberation of iodine is brought about about by solar rays other than the ultra-violet, for comparative purposes the method possesses the distinct advantage that it is capable of yielding, with very few exceptions, definite results daily throughout the year.

The results obtained at the three points of observation by the acetone-methylene-blue method are appended, together with the results obtained at 20 Trongate by the iodine method. These results, summarised in tabulated form, and notes thereon are the work of my assistant, Mr. W. M. Cameron.

•THE MEASUREMENT OF ULTRA-VIOLET RAYS.
ACETONE-METHYLENE-BLUE METHOD.

TRONGATE.

Number of Days showing a fading of Methylene-Blue (in units).

													Total Units.		
	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	Average.	Trongate.	St. Andrew's Hall.
1929—															
July, ...	—	—	2	—	3	4	14	3	2	—	1	2	3.04	94.5	—
Aug., ...	—	4	—	6	7	8	4	—	1	—	—	1	2.14	66.5	—
Sept., ...	—	3	3	4	7	6	4	3	—	—	—	—	2.06	62.0	—
Oct., ...	11	8	6	4	2	—	—	—	—	—	—	—	0.6	20.0	—
Nov., ...	21	4	5	—	—	—	—	—	—	—	—	—	0.2	7.0	—
Dec., ...	25	6	—	—	—	—	—	—	—	—	—	—	0.09	3.0	—
1930—															
Jan., ...	25	6	—	—	—	—	—	—	—	—	—	—	0.09	3.0	—
Feb., ...	19	8	1	—	—	—	—	—	—	—	—	—	0.10	5.0	—
Mar., ...	10	6	10	5	—	—	—	—	—	—	—	—	0.7	20.5	—
April, ...	2	5	11	4	2	—	—	1	—	—	—	—	1.2	38.0	36.5
May, ...	2	8	9	3	4	5	—	—	—	—	—	—	1.2	38.0	39.0
June, ...	—	1	4	12	10	3	—	—	—	—	—	—	1.7	50.0	40.0
July, ...	1	7	9	4	8	2	—	—	—	—	—	—	1.3	39.5	30.0
Aug., ...	6	7	11	5	2	—	—	—	—	—	—	—	0.8	26.0	19.0
Sept., ...	8	10	7	2	1	2	—	—	—	—	—	—	0.7	22.0	22.5
Oct., ...	17	9	5	—	—	—	—	—	—	—	—	—	0.3	9.5	21.0
Nov., ...	21	5	4	—	—	—	—	—	—	—	—	—	0.2	6.5	0.0
Dec., ...	28	3	—	—	—	—	—	—	—	—	—	—	0.05	1.5	0.0
1931—															
Jan., ...	23	4	4	—	—	—	—	—	—	—	—	—	0.2	6.0	0.0
Feb., ...	13	12	1	2	—	—	—	—	—	—	—	—	0.3	10.0	0.0
Mar., ...	6	20	5	—	—	—	—	—	—	—	—	—	0.5	15.0	0.0
April, ...	1	8	13	7	1	—	—	—	—	—	—	—	1.0	29.5	37.0
May, ...	—	6	6	8	10	1	—	—	—	—	—	—	1.4	43.5	57.0
June, ...	4	8	3	7	6	1	1	—	—	—	—	—	1.2	35.0	57.5
July, ...	—	—	1	2	14	3	9	1	1	—	—	—	2.4	74.0	*
Aug., ...	—	—	7	8	10	1	2	2	1	—	—	—	1.9	58.5	61.0
Sept., ...	—	5	12	5	7	1	—	—	—	—	—	—	1.3	38.5	*
Oct., ...	17	7	5	2	—	—	—	—	—	—	—	—	0.4	11.5	*
Nov., ...	30	—	—	—	—	—	—	—	—	—	—	—	0.0	0.0	11.5
Dec., ...	31	—	—	—	—	—	—	—	—	—	—	—	0.0	0.0	4.0
1932—															
Jan., ...	20	11	—	—	—	—	—	—	—	—	—	—	0.1	5.5	2.0
Feb., ...	15	14	—	—	—	—	—	—	—	—	—	—	0.2	7.0	4.5
Mar., ...	26	5	—	—	—	—	—	—	—	—	—	—	0.08	2.5	3.0
April, ...	8	21	1	—	—	—	—	—	—	—	—	—	0.4	11.5	3.0
May, ...	8	23	—	—	—	—	—	—	—	—	—	—	0.4	11.5	1.5
June, ...	3	24	2	—	—	1	—	—	—	—	—	—	0.5	16.5	28.0
July, ...	—	—	6	3	14	5	3	—	—	—	—	—	1.9	60.0	30.0
Aug., ...	—	6	12	9	4	—	—	—	—	—	—	—	1.2	36.5	24.5
Sept., ...	1	17	10	2	—	—	—	—	—	—	—	—	0.7	21.5	14.5
Oct., ...	2	27	2	—	—	—	—	—	—	—	—	—	0.5	15.5	8.0
Nov., ...	18	12	—	—	—	—	—	—	—	—	—	—	0.2	6.0	2.5
Dec., ...	25	6	—	—	—	—	—	—	—	—	—	—	0.1	3.5	4.0
1933—															
Jan., ...	26	5	—	—	—	—	—	—	—	—	—	—	0.1	2.5	1.5
Feb., ...	11	15	2	—	—	—	—	—	—	—	—	—	0.3	9.5	1.5
Mar., ...	12	15	4	—	—	—	—	—	—	—	—	—	0.4	11.5	5.0
April, ...	1	11	15	2	1	—	—	—	—	—	—	—	0.8	25.5	2.5
May, ...	—	10	10	5	5	—	1	—	—	—	—	—	1.1	35.5	9.0
June, ...	—	—	11	5	7	1	4	2	—	—	—	—	1.8	54.0	29.0
July, ...	—	1	6	9	7	1	3	—	1	—	3	—	2.1	64.5	35.5
Aug., ...	—	3	5	6	9	4	2	—	—	2	—	—	1.9	58.5	25.0
Sept., ...	—	6	10	8	6	—	—	—	—	—	—	—	1.2	37.0	28.0
Oct., ...	17	14	—	—	—	—	—	—	—	—	—	—	0.2	7.0	10.0
Nov., ...	26	4	—	—	—	—	—	—	—	—	—	—	0.06	2.0	5.5
Dec., ...	31	—	—	—	—	—	—	—	—	—	—	—	0.0	0.0	1.5

* No record.

MEASUREMENT OF ULTRA-VIOLET RAYS
ACETONE-METHYLENE-BLUE AND IODINE METHODS
MONTHLY AVERAGES & MONTHLY TOTALS

		Trongate. Iodine in Milligrams.		Trongate. Methylene-Blue in Units.		St. Andrew's Hall. Methylene-Blue in Units.		Robroyston Hospital. Methylene-Blue in Units.	
		Average.	Total.	Average.	Total.	Average.	Total.	Average.	Total.
929—									
July, ...	...	—	—	3.04	94.5	—	—	—	—
August, ...	...	—	—	2.14	66.5	—	—	—	—
September, ...	...	—	—	2.06	62.0	—	—	—	—
October, ...	...	—	—	0.6	20.0	—	—	0.6	20.5
November, ...	...	—	—	0.2	7.0	—	—	0.1	4.5
December, ...	...	—	—	0.09	3.0	—	—	0.08	2.5
930—									
January, ...	...	—	—	0.09	3.0	—	—	0.06	2.0
February, ...	...	—	—	0.10	5.0	—	—	0.40	10.5
March, ...	...	—	—	0.7	20.5	—	—	0.4	13.5
April, ...	...	—	—	1.2	38.0	1.2	36.5	1.0	30.5
May, ...	...	—	—	1.2	38.0	1.3	39.0	1.8	56.5
June, ...	...	—	—	1.7	50.0	1.3	40.0	0.8	25.5
July, ...	...	—	—	1.3	39.5	1.0	30.0	0.3	8.0
August, ...	...	—	—	0.8	26.0	0.6	19.0	0.5	14.5
September, ...	...	—	—	0.7	22.0	0.7	22.5	0.1	3.0
October, ...	...	—	—	0.3	9.5	0.7	21.0	0.3	9.0
November, ...	...	—	—	0.2	6.5	0.0	0.0	0.1	4.5
December, ...	...	—	—	0.05	1.5	0.0	0.0	0.0	0.0
931—									
January, ...	...	—	—	0.2	6.0	0.0	0.0	0.0	1.0
February, ...	...	—	—	0.3	10.0	0.0	0.0	0.05	1.5
March, ...	...	8.43	261.43	0.5	15.0	0.0	0.0	0.7	22.5
April, ...	...	12.13	364.00	1.0	29.5	1.2	37.0	0.3	10.5
May, ...	...	14.32	443.82	1.4	43.5	1.8	57.0	1.4	45.0
June, ...	...	11.63	349.11	1.2	35.0	1.9	57.5	0.5	14.5
July, ...	...	10.13	314.50	2.4	74.0	No Report.		0.5	16.5
August, ...	...	10.03	310.86	1.9	58.5	2.0	61.0	0.5	16.5
September, ...	...	11.52	345.88	1.3	38.5	No Report.		Apparatus unreliable.	
October, ...	...	10.46	324.42	0.4	11.5	do.		do.	
November, ...	...	2.26	67.70	0.0	0.0	0.4	11.5	do.	
December, ...	...	0.86	26.63	0.0	0.0	0.1	4.0	0.0	1.0
932—									
January, ...	...	2.19	67.86	0.1	5.5	0.06	2.0	0.0	0.5
February, ...	...	3.76	110.97	0.2	7.0	0.1	4.5	0.1	3.0
March, ...	...	4.25	131.79	0.08	2.5	0.1	3.0	0.2	6.5
April, ...	...	7.24	217.26	0.4	11.5	0.1	3.0	0.6	19.5
May, ...	...	8.38	259.86	0.4	11.5	0.05	1.5	1.0	33.0
June, ...	...	10.30	309.13	0.5	16.5	0.9	28.0	—	—
July, ...	...	9.22	285.86	1.9	60.0	1.0	30.0	—	—
August, ...	...	7.19	222.96	1.2	36.5	0.8	24.5	—	—
September, ...	...	6.34	190.31	0.7	21.5	0.5	14.5	—	—
October, ...	...	4.31	133.79	0.5	15.5	0.2	8.0	—	—
November, ...	...	1.61	48.55	0.2	6.0	0.08	2.5	—	—
December, ...	...	0.76	23.62	0.1	3.5	0.1	4.0	—	—
933—									
January, ...	...	0.84	26.03	0.1	2.5	0.05	1.5	—	—
February, ...	...	2.96	83.15	0.3	9.5	0.05	1.5	—	—
March, ...	...	5.79	179.55	0.4	11.5	0.2	5.0	—	—
April, ...	...	6.30	188.95	0.8	25.5	0.08	2.5	—	—
May, ...	...	7.50	232.38	1.1	35.5	0.30	9.0	—	—
June, ...	...	7.75	232.61	1.8	54.0	1.0	29.0	—	—
July, ...	...	9.82	304.33	2.1	64.5	1.1	35.5	—	—
August, ...	...	8.20	254.19	1.9	58.5	0.8	25.0	—	—
September, ...	...	6.44	193.45	1.2	37.0	0.9	28.0	—	—
October, ...	...	4.08	126.54	0.2	7.0	0.3	10.0	—	—
November, ...	...	1.61	48.25	0.06	2.0	0.18	5.5	—	—
December, ...	...	0.70	21.55	0.0	0.0	0.05	1.5	—	—

NOTES ON METHODS EMPLOYED.

By W. M. Cameron.

Acetone-Methylene-Blue Method. — Standard quartz tubes containing the prescribed solution of acetone-methylene-blue are exposed to the sunlight for 24 hours. From the first the 24 hours' period has been reckoned from 10 a.m. to 10 a.m. the following day. Daily at 10 a.m. the tint of the solution contained in the quartz tube after exposure is compared with the depth of tint in the standard tubes, and the degree of bleaching expressed in units on the empirical scale. It is necessary before exposure to compare the tint of the solution in the quartz tube with the standard tubes. This will obviate any errors due to variations in the tint of the standard solution supplied by the makers.

The accuracy of the standard acetone-methylene-blue solution has on occasion been called in question, as, unexpectedly and contrary to previous experience, an exposure prolonged even to 48 hours failed to produce the slightest bleaching effect. The attention of the makers was directed to the low and unsatisfactory results that were then being obtained both at 20 Trongate and at St. Andrew's Hall, though throughout that period (June, 1932) there were prolonged periods of bright sunshine. In their reply to this complaint, the makers suggested that in Glasgow, in spite of sunshine, there are likely to be low readings owing to smoke pollution and mist which cut out the shorter ultra-violet rays—those which act on the solution and produce sunburn.

That the presence of a smoke-haze or mist forms an impenetrable barrier to the diffusion of ultra-violet rays is, unfortunately, an all-too-common experience in Glasgow, but the suggestion that the low results recorded during June, 1932, are attributable to their presence is not tenable and negated by the results of the following comparative tests. Tubes were simultaneously exposed for 48 hours at 20 Trongate and at Knightswood on the 18th/20th of June. The bleaching of the methylene-blue solution at Trongate was equivalent to 1 unit on the empirical scale, whilst the bleaching effect at Knightswood, though greater than 1, was less than 1.5 units.

Similarly, practically no difference was observed between City and Coast in the bleaching effect of the sun's rays during brilliant summer weather, one tube being exposed for 48 hours (21st/23rd June) at 20 Trongate and the other at Kilcreggan.

The large number of low readings and the monthly total number of units recorded for the month of June, 1932, are attributable, therefore, to the reactivity of the acetone-methylene-blue solution being below normal.

Iodine Method of "Bering-Meyer."—The iodine liberated by a 24-hours' exposure in a quartz flask from 10 c.c.'s of a 2 per cent. solution of potassium iodide acidified with 10 c.c.'s of an approximately N/4 sulphuric acid is titrated with sodium thiosulphate, the amount of iodine being expressed in milligrammes. The method possesses the advantage that it is very sensitive and is capable of yielding, with rare exceptions, definite results for each day of the year. The results obtained by the iodine method are summarised in the Table on page 222.

This table shows the number of days in each month on which the amount of iodine liberated falls within the divisions of an arbitrary scale. In this form the table reveals at a glance the extreme variations that occur throughout each month and each season of the year.

The seasonal influence on the chemical activity of the sun's rays as measured by the amount of iodine liberated is more sharply demonstrated in the following table, in which I have collected the results obtained on particular summer and winter days having the same number of hours of sunshine and similar other climatic conditions:—

Date.	Hours of Sunshine.	Iodine (in mgms.)	Weather.
28th/29th June, 1932.	1.0	2.82	28th Forenoon and Afternoon, Overcast.
12th/13th Jan., 1933.	1.2	0.91	29th Morning, Cloudy, Bright. 12th Forenoon and Afternoon, Cloudy.
28th/29th July, 1932.	4.2	10.92	13th Morning, Cloudy. 28th Forenoon and Afternoon, Cloudy, Bright.
9th/10th Jan., 1933.	4.0	1.56	29th Morning, Bright Sunshine. 9th Forenoon and Afternoon, Cloudy, Bright.
11th/12th July, 1932.	1.3	8.32	10th Morning, Overcast. 11th Forenoon and Afternoon, Overcast.
22nd/23rd Dec., 1932.	1.3	0.91	12th Morning, Overcast. 22nd Forenoon and Afternoon, Cloudy, Bright.
11th/12th Aug., 1932.	2.5	9.1	23rd Morning, Overcast. 11th Forenoon and Afternoon, Cloudy, Bright—Rain later.
2nd/3rd Dec., 1932.	2.2	1.69	12th Morning, Cloudy, Bright. 2nd Forenoon and Afternoon, Cloudy, Bright—Rain later. 3rd Morning, Overcast—Rain.

An interesting fact regarding the influence of ground conditions on the liberation of iodine emerged from a study of

the results obtained during the period 15th to 27th January, 1933. Fog was very prevalent during this period, and the results obtained during the days 20th/21st and 26/27th are interesting:—

Date.	Hours of Sunshine.	Iodine (in mgms.)	Weather.
20th/21st Jan., 1933.	Nil.	0.91	20th Forenoon and Afternoon, Light fog. 21st Morning, Overcast.
26th/27th Jan., 1933.	Nil.	Less than 0.13	26th Forenoon and Afternoon, Light fog. 27th Morning, Overcast.

Thus both days have exactly the same kind of weather, yet the former has much more radiation than the latter. The latter is equivalent to less than 0.1 c.c., and is thus hardly measurable, while the former is equivalent to 0.7 c.c.—more than seven times as much. This may be accounted for by the fact that during the period 15th to 27th the ground was permanently covered with a good layer of hoar frost, until the morning of the 26th when it began to disappear, and had completely disappeared by the morning of the 27th. (It may be assumed to have all disappeared by noon of the 26th.) Thus, reflection from the hoar frost seems to have much to do with the higher figure on the 20th/21st. In the same way, other days in that period show the same contrast with the 26/27th.

In the table on page 223 is summarised in the form of monthly averages and monthly totals the results obtained by the acetone-methylene-blue method at Trongate, St. Andrew's Hall, and Robroyston, and the results obtained by the iodine method at Trongate. The location of the quartz tube containing the acetone-methylene-blue solution and the quartz flask containing the acidified potassium iodide solution, situated on the flat roof of an out-building six feet above the roof level at 20 Trongate, presents on all sides a free and uninterrupted exposure.

SMOKE ABATEMENT.

It must be apparent to an intelligent observer that the average amount of smoke emission from industrial chimneys within the City boundaries has been reduced to a remarkable extent as compared with that noted, say, two decades ago—even allowing for the prevailing industrial conditions. This change has been a gradual one, the contributory factors being (a) the adoption of more modern plant and appliances; (b) the use of superior fuels; (c) radical changes in methods of management; and (d) close routine supervision and control by the smoke inspectors. Many years of steady administrative work by the inspectorate have increasingly directed the attention of plant

owners and users to the necessity for reducing smoke emission. Observations indicate that the above general improvement continued throughout the year 1933 uniformly so in all districts. While much has been done, much still remains to be done, and close supervision is necessary to maintain and improve the standard reached.

The routine work of the inspectors is in the main of an advisory nature, their specialised training enabling them to offer advice to plant owners and users, invariably with ready acceptance. At the same time, this measure is reinforced by local legislation adequate to control smoke emissions of more flagrant character, the statute being The Glasgow Police (Further Powers) Act, 1892, Section 31. Under this enactment there are not the provisos exempting certain industries which obtain in the general Acts, and which in many localities cause these Acts in practice to be inoperable. Nevertheless, some latitude is allowed to these processes within the City which would otherwise be exempt were they outwith the boundary, as there is no desire to handicap their operations unduly as compared with outside competitors. Every effort is made, however, to have them reduce their smoke emission to within accepted limits, and in most instances, when complaints are intimated, immediate attention is given and the desired improvement effected where possible. For any anomalies in administration which exist the remedy is a general smoke abatement Act for Scotland, exempted industrial processes being as few as possible. Uniform control would be the result.

Improvements to Plant noted during 1933.—In each Annual Report a summary has been given of the recorded improvements made to furnaces leading to smoke abatement during the year under review. In recent years the nature of many such improvements has been very extensive, involving large capital expenditure. The following is a list of improvements during the year and also the headings under which they are classified:—

Number of new steam boilers installed to give increased power,	10
Number of mechanical stokers fitted to steam boilers, ...	10
Number of furnaces in which anthracite, coke, or other non-bituminous fuel has been substituted for ordinary coal,	20
Number of steam boilers replaced by electric motors using public power,	7
Number of new chimneys erected, or existing chimneys heightened to give increased draught to carry gases higher,	25
Number of improvements to plant not coming within any of the above headings,	15

The improvements given year by year under these headings have been a most important factor in reducing industrial smoke. The above list, though creditable, contains fewer individual improvements of the magnitude of the numerous examples cited

in recent reports, the number being made up of those carried out in connection with smaller plants. It is to be noted, however, that the list refers solely to plants which have been previously the subject of complaint as regards smoke emission. Other alterations have been made on plants connected with chimneys which were considered satisfactory, but they are not recorded here.

In connection with one extensive programme carried out and falling under the latter category I might make an exception. At the Pinkston Power Station of the Corporation Transport Department six large water tube boiler units of the most modern type were installed, replacing more than double that number of an older type and of much smaller capacity. These boilers are fitted with mechanical stokers, forced and induced draught systems, economisers, mechanical grit collectors, and all auxiliaries and instruments, while three new steel chimneys have been erected to carry away spent gases. At the same time, the electrical output of the station has been more than double, a new generator in conformity with the latest practice having been installed, while the existing one has been completely modernised. Some heavy smoke emissions during the transitional stage occurred, but now that the plant is in full working order the chimneys connected with this station are smokeless.

At the City Chambers power-house one Lancashire boiler of medium capacity and hand-stoked has been replaced by two very large Lancashire boilers fitted with mechanical stokers and induced draught, and complete with all auxiliaries—a most comprehensive scheme. This plant is connected with the heating installation of the extensive blocks of buildings. The chimney connected therewith is now practically smokeless in operation.

Summary of Work.—Routine supervision is maintained by the smoke inspection staff over all chimneys other than domestic within the City boundaries, and, as the necessity arises, special work is done in any locality. The following is a summary of such work done during the year:—

Number of observations of chimneys,	28,771
Number of inspections of steam boilers and other furnaces,	1,238
Number of intimations of excess smoke given,	283
Number of initial warning notices served,	27

Prosecutions.—During 1933 there were 33 prosecutions taken against offending firms for the issue of excessive smoke. Technical cases such as these are taken before the Stipendiary Magistrate in the Central Police Court. Included in the above figure are those cases reported by the smoke inspectors and instituted under the Glasgow Police (Further Powers) Act, 1892, Section 31, and

also those reported by the Traffic Police Patrols under the Motor Vehicles (Construction and Use) Regulations, 1931, Nos. 17 and 67. In the latter cases the smoke inspectors afford technical assistance and appear as witnesses for the prosecution when necessary. Of the 30 convictions obtained, 25 were for first offences, the average penalty imposed being £1 0s. 3d.; 6 were in respect of second offences, the average penalty being £1 0s. 9d.; while 2 were the result of third offences, the average penalty being £2 5s. The total fines imposed amounted to £31. Under the Further Powers Act the maximum fine is 40s. for a first offence and £5 for a second or subsequent offence if committed within five years of the previous conviction. In every case under this Act the offenders had been, of course, previously warned, and, in most cases, several times without avail. Prosecution is only resorted to when it is considered that warnings are being ignored and no attempt is being made to secure improvement in "means" and "management," i.e., in plant or methods of operation. This department much prefers an amicable abatement of a nuisance to a successful prosecution.

Investigation of Complaints.—At the expense of reiteration, it may be stated that a considerable part of the inspectors' time is taken up with the investigation and remedy of the large number of complaints received each year, the average in recent years being about 150 per annum. Public appreciation of the health aspect of environment is certainly increasing, and it is likely that complaints will also do so *pro rata*. Each complaint usually requires preliminary confirmation and subsequent observations before remedial measures of one kind or another can be advised and adopted. Some complaints are trivial in nature, but most are justified, the majority being caused by the erection of new chimneys or the use of existing chimneys in close proximity to dwellings too low to carry the spent gases or smoke clear. Small steam boilers, process furnaces, and heating plant, invariably burning bituminous fuel, are the plants connected therewith.

Sectional Type Boilers and Hot-water Heaters.—Heating boilers of the sectional type, used in conjunction with central heating plants, &c., continued to be a constant source of nuisance, particularly in the central districts of the City, where they are very numerous. These boilers are designed primarily for the combustion of non-bituminous fuels such as anthracite, semi-anthracite, or coke, and the use of highly-bituminous fuels is much to be deprecated. When fuel of this nature is used the boilers become veritable smoke producers, and much skill and attention are necessary if the smoke is to be kept within reasonable limits. Few, for various reasons, receive this attention. As most of the heat is absorbed by radiation, coke

gives very successful results, and it is gratifying to note that many users each year are substituting this fuel for bituminous nuts. In the case of hot-water heaters where bituminous fuel is used, the excuse is made that the use of coke is detrimental to these boilers, the inner shell of which is usually of copper, it being claimed that the sulphur liberated during combustion attacks the metal. This argument is illogical, because in the carbonisation of coke at least one-half of its total sulphur content is distilled off with the gases, so that, bulk for bulk, there is less sulphur in coke than in raw fuel, nor is the moisture content of coke when used, particularly after storage, appreciably higher than that of bituminous fuel.

Steam Wagons and Portable Tar Melters. — Prosecutions continue to be instituted against the drivers of steam vehicles for the issue of excessive smoke on the public highways, the indictment being "that they did not take reasonable steps or exercise reasonable care to avoid the emission." The emission of "visible vapour, grit, sparks, ashes, cinders, or oily substance" also falls within the same clause. The Police Traffic Patrols have done good work in this connection, and certainly within the City, since their inception under the Road Traffic Act, there has been a remarkable reduction in the aggregate issue of smoke from these vehicles. It is quite apparent that steam wagon owners are now using fuel of much higher quality (i.e., high calorific value and low volatile content) than had been the case heretofore. During the past year the National Smoke Abatement Society have been taking active steps to make the use of fuels not exceeding 14 per cent. volatile content obligatory for all road steam vehicles, the initiative having been taken by the Scottish Branch of the Society. Conversations have taken place at the Ministry of Transport with a view to effect being given to this recommendation, and the result is awaited with interest.

During the year a conviction was obtained against the owners and users of a tar melter which was operating adjacent to a very busy traffic crossing. A protracted dense issue of smoke was carried across the thoroughfare due to heavy stoking of the appliance with ordinary bituminous fuel, and the excuse offered by the attendants was that "they had temporarily run short of their usual supply of coke"—an excuse which appears to be rather hackneyed in these cases. Fortunately most users of these appliances now burn coke exclusively and are, at the same time, careful as to management.

Shipping in the Harbour.—During the year routine work was carried out in the dock and river areas, special observations being also made frequently in the early morning. Three prosecutions were instituted—two in respect of large ocean-going liners and

one in connection with a popular river passenger steamer. In each case warnings had previously been given to the owners regarding others of their ships. Three convictions were obtained, fines being imposed in two instances. In the case of one vessel (Japanese) the master contended that he was not aware of the smoke regulations and he was admonished. In the case of the river steamer, which was lying at the quayside, complaints had been received of heavy smoke emissions in the early morning. Observations made at that time confirmed the complaints. In each of these cases the nuisance was caused by excessively heavy stoking of the furnaces, no regard being paid to the probability of smoke emission. A number of warning notices have also been given to companies not already warned. It is noted that tugboats, while engaged in towing operations, are a frequent cause of nuisance, although in these cases smoke emission is certainly more difficult to control owing to the necessarily erratic steam demands while manœuvring. It may be stated that, as a result of the attention given to the harbour localities, more careful supervision is being effected, most of the local shipping companies and river-craft owners being now aware that the Further Powers Act is being applied to shipping in common with the remainder of the City. Until 1929 smoke from shipping was controlled solely under the Clyde Navigation Bye-laws.

Classes in Smoke Abatement, Boiler Efficiency, and Furnace Management.—These classes are held annually in Glasgow during the winter months from September to March, an ordinary and an advanced class being run concurrently during alternate weeks. The full course of lectures in each class amounts to 12, i.e., a total of 24 lectures. They are run under the joint auspices of the Scottish Branch of the National Smoke Abatement Society and the Corporation of Glasgow Public Health Department. The eighteenth annual session concluded on 13th March, 1934. The fee payable was the nominal one of 2s. 6d. During the lectures the comprehensive series of wall charts was fully made use of, while two lectures were illustrated by lantern slides. Towards the end of the session visits were paid to the Pinkston Power Station of the Transport Department and also to the Destructor Power Station of the Cleansing Department at Govan, and there was a large turn-out of the members. These annual visits to various plants are always found to be of distinct educational value. The total enrolment in the two classes was 90, this number again equalling the large enrolment of past years and affording continued evidence of the practical value of these courses. The attendances for the session in both classes were 87·6 per cent. and 96·2 per cent. respectively, giving the high average figure of 91·9 per cent., an indication of how these classes are appreciated by the members. The written examinations were held on 17th March, and 33 men came forward. Merit certi-

ificates of competency were gained by 18 members in the ordinary examination and 10 in the advanced. Three prizes are allocated to each class, 65 per cent. or over of the possible marks being necessary for a merit certificate. There were 17 members, who had not qualified for merit certificates, eligible for full attendance certificates. Actually 42 men made full attendance. The usual annual social meeting of the branch will be convened at the beginning of May, when the prizes and certificates will be distributed.

Soot-Collecting Gauges.—The monthly analyses of the gauges from the collecting stations in the City's parks—nine in number—give a mean precipitation for the year of 236·69 tons per square mile. This is an increase of 2·33 tons per square mile as compared with the figure for the preceding year of 1932. While the total rainfall during the past year was unusually low, and considerably less than that of the preceding year, the rain was more intermittent, with relatively few periods of steady downpour, a feature which resulted in more thorough periodic “washing” of the atmosphere, and which no doubt accounts for the apparent small increase. The effect of this may be particularly noted when a comparison is made between the months of February and July. During the former month the total rainfall was 87·99 millimetres as compared with only 61·37 millimetres during July, yet the latter month shows a slightly heavier precipitation than the former with a very much smaller rainfall. The month of February had some prolonged periods of rain, while in July the showers were of short duration.

Again, if the usual comparison is made between the “summer” months (April to September) and the “winter” months (January to March-October to December), the mean soot and dust fall is found to be 17·14 tons per square mile and 22·30 tons per square mile respectively, the accompanying rainfalls being 47·17 millimetres and 59·14 millimetres. The aggregate rainfall for the latter period was more frequent and heavier, and at the same time there was a much greater emission of smoke from both industrial and domestic sources.

Appended hereto is a table giving the average monthly deposit of each element of atmospheric pollution for the year.

THOS. M. ASHFORD,

Senior Smoke Inspector.

23rd April, 1934.

AVERAGE DEPOSIT OF EACH ELEMENT OF ATMOSPHERIC POLLUTION FOR EACH MONTH OF 1933.

English Tons per Square Mile.

Month.	Rainfall in Millimetres.	Insoluble Matter.				Soluble Matter.				Included in Soluble Matter.				Total Solids.				
		Tar.	Carbonaceous other than Tar.	Ash.	Total Insoluble Matter.	Loss on Ignition.	Ash.	Total Soluble Matter.	Total Solids, 1933.	Sulphate as SO ₄ .	Chlorine as Cl.	Ammonia as NH ₃ .	1932.	1931.	1930.	1929.	1928.	1927.
Mean of 3 Stations, ...	98.44	.38	4.23	9.41	14.02	4.93	7.09	12.02	26.04	3.40	1.15	.19	17.86	23.61	21.04	24.19	34.13	26.63
January	87.99	.10	3.84	6.03	9.97	3.63	6.59	10.22	20.19	2.97	1.16	.23	20.00	22.05	20.65	17.68	26.08	21.60
February	51.80	.18	2.89	7.28	10.35	2.53	4.23	6.76	17.11	2.31	.54	.16	22.67	19.99	22.54	21.51	24.58	18.58
March	42.50	.22	3.33	7.26	10.81	2.73	4.40	7.13	17.94	2.17	.41	.17	20.11	20.56	19.65	20.88	18.03	24.85
April	57.53	.17	3.33	5.49	8.99	3.35	6.47	9.82	18.81	2.64	.46	.29	17.07	32.94	17.12	22.64	24.56	22.17
May	46.42	.19	3.21	6.63	10.03	1.48	5.16	6.64	16.67	2.02	.35	.11	19.68	23.73	26.26	23.81	28.41	31.25
June	61.73	.59	3.87	8.33	12.79	2.42	6.49	8.91	21.70	2.85	.30	.16	24.04	25.23	22.11	17.73	20.97	26.87
July	51.79	.11	1.92	3.56	5.59	4.18	5.75	9.93	15.52	2.32	.52	.30	19.05	16.60	26.49	30.07	23.08	54.45
August	23.05	.09	2.46	5.22	7.77	.89	3.58	4.47	12.24	1.38	.22	.39	18.42	12.45	22.70	15.10	18.25	25.16
September	61.77	.16	3.53	7.04	10.73	3.90	6.25	10.15	20.88	2.44	.62	.17	17.56	21.97	21.71	26.13	31.28	32.86
October	42.59	.67	4.18	7.79	12.64	2.10	4.35	6.45	19.09	2.21	.54	.25	21.77	23.97	24.67	29.42	23.85	19.90
November	12.28	.70	7.29	16.52	24.51	2.10	3.89	5.99	30.50	1.94	.34	.09	16.13	19.06	28.64	29.04	23.63	13.12
December																		
Yearly Deposit in Tons per Sq. Mile,	637.89	3.56	44.08	90.56	138.20	34.24	64.25	98.49	236.69	28.65	6.61	2.51	234.36	262.16	273.58	278.20	296.85	317.44
Monthly Mean of all Gauges,	53.16	.30	3.67	7.54	11.51	2.85	5.36	8.21	19.72	2.39	.55	.21	19.53	21.85	22.80	23.19	24.74	26.45

SECTION XII.

GENERAL SANITARY OPERATIONS.

DISINFECTION.

The following tables summarise the washings and disinfections carried out at Ruchill and Belvidere Disinfecting Stations during the year 1933:—

	Belvidere.	Ruchill.	Total.
Number of washings,	10,848	10,678	21,526
Average number per day,	29·7	29·2	59·0
Articles washed and disinfected, ...	340,385	392,582	732,967
Average number of articles per washing,	31·4	36·8	34·0
Fuel consumed (tons),	697	606	1,303
Fuel used per article (lbs.),	4·67	3·50	3·98
Soap and powder used per article (ozs.),	0·40	0·28	0·25
Disinfectant " " " "	0·55	0·55	0·55

NUMBER OF WASHINGS, ARTICLES DISINFECTED, &c., FOR
YEARS 1921-33 INCLUSIVE.

	Washings.	Articles.	Sprayings.	Whitewashings.
1921,	18,060	655,867	19,196	21
1922,	14,837	533,450	9,418	21
1923,	14,423	526,285	8,008	2
1924,	14,690	510,275	8,405	3
1925,	14,408	530,777	8,473	2
1926,	15,992	620,038	9,806	—
1927,	16,323	648,516	10,495	2
1928,	15,135	584,257	9,219	—
1929,	14,593	590,676	10,076	27
1930,	16,996	617,675	12,222	17
1931,	18,793	678,367	13,545	13
1932,	22,183	806,360	15,248	12
1933,	21,526	732,967	15,485	4

Books disinfected, 1,650.

Fumigation of Vessels.—Most of the fumigations of vessels for disinfestation of rats are done by this department. Information regarding this matter is given in the report of the work of the Port Local Authority, which forms Section VII.

Disinfection of Second-hand Clothing, &c.—Disinfection of second-hand clothing for export to Ireland, as required by the regulations issued by the Irish Free State, continued to a reduced extent throughout the year. In all, 473 consignments were disinfected and certificates issued, the total amount received in respect of charges being £113 13s. 6d.

A comparison with the figures for previous years shows a further decrease in the volume of the traffic, which may be mainly attributed to the unsettled conditions obtaining in the Free State during the year.

Disinfection of Straw Coverings.—In order to comply with the regulations of various countries, the arrangements for the disinfection and certification of straw coverings were continued during the year. No additional names have been added to the list of those providing suitable chambers for this purpose, and the former arrangement whereby the Department is notified when a supply of packing is to be disinfected continued.

OFFENSIVE TRADES.

There were on the register of offensive trades in the city at 31st December 69 businesses coming under this category, which is one less than the number at the end of the preceding year.

The nature of the businesses is shown in the following statement:—

	1933.	1932.
Bone boilers,	8	8
Tallow melters,	19	21
Manure manufacturers,	8	8
Gut cleaners,	2	3
Hide and skin factors,	9	8
Soap boilers,	11	11
Tanners,	8	7
Glue and size manufacturers,	2	2
Horse slaughterer,	1	1
Knacker,	1	1
	<hr/> 69	<hr/> 70

Particulars regarding the administrative supervision of the premises in which these businesses are situated and of the renewals of registration are given in the reports by the Divisional Sanitary Inspectors which follow.

GENERAL SANITARY CONDITIONS.

The reports by the Divisional Sanitary Inspectors are included in this section; they deal with the work of the department as given in detail in Table XXIII of the Appendix, which contains tabulated particulars of inspections, nuisances, &c., in each municipal ward and for the city. References are made to the principal statistics for each division, and comments are made on the more important complaints or problems arising during the year.

CENTRAL DIVISION.

Complete details of the work carried out during the year will be found in the Appendix in the tables showing the operations of the Sanitary Section.

Although failure on the part of tenants to observe their weekly rotation in the cleansing of stairs, closes, &c., continues as the most prolific source of complaint, one is inclined to pass it over once in a while in presenting a résumé of the work of the Division. There was, however, one case in the course of the year in which the Stipendiary Magistrate gave a rather important decision which may be of wide interest.

In the western part of the district scores of large self-contained houses have been divided into flats. The question arose as to whether such houses could be treated as ordinary tenements and the occupiers of each flat called upon to wash the stair down to the flat immediately beneath. In the case mentioned, the occupier of a flat, who happened to be a lawyer, requested that a test case be brought before the Stipendiary Magistrate in order to test his opinion that, at the time the bye-laws were made, the class of house in question did not exist and so the bye-laws could not be accepted as applicable. In giving his decision, the Stipendiary Magistrate said: "This case raises an interesting and important point, and one which may affect an ever-increasing number of tenants or occupiers of houses in Glasgow."

The premises libelled form part of a large building which was formerly occupied as a single residence, but is now divided into flats for separate tenancies. The Respondent is the proprietor and occupier of the ground flat. He was called upon under the bye-laws libelled to sweep and wash the close or entry leading to his premises, but contends that, as the said bye-laws apply only to ordinary tenement property, he is not bound thereby. The Procurator-Fiscal finds that he is so bound since the premises

are now nothing more or less than a tenement property to which the bye-laws libelled are applicable. "It may be," continued the Stipendiary Magistrate, "that when these bye-laws were made in 1896, they were intended to apply to the ordinary tenement property simply, and that the particular class of property in question, such as the new residential flats throughout the City, was not then contemplated. But, nevertheless, if the language of the bye-laws is wide enough to include the latter, they must, in my view, in accordance with the ordinary canons of construction, be held to include such property." The Respondent was, therefore, held liable under the bye-laws, but as this was the first case of its kind, and was brought as a test case, no penalty was imposed.

Complaints of obnoxious smells in the Anniesland area, which for several years caused considerable anxiety to the Department, and received publicity in the local Press, have ceased since midsummer.

The Departmental enquiries and observations carried on, day and night, would no doubt cause extra care to be observed in all local works which might give rise to nuisance. In addition, since the beginning of August, a new plant for the concentration of ammonia liquor at the Corporation Chemical Works, Dawsholm, has been in operation. The purpose of this plant is to concentrate a 2 per cent. solution of ammonia to 18 per cent. and transport in bulk to the Provan Works where the terminal product, ammonium sulphate, is manufactured. This plant is automatically controlled in respect of steam and liquor concentration, and, therefore, completely cuts out the human element in the management of the processes. The final product contains 18 per cent. ammonia and 2 per cent. H_2S in the liquor. It had, in addition, the advantage of a marked lowering of the "toxicity" of the terminal effluent. The patentees guaranteed that the terminal gases would contain a negligible quantity of H_2S , and that no final filtration was necessary to prevent a nuisance. However, Dr. Wylam, of the Department of Health, to whom we are indebted for valuable advice and assistance, arranged that a terminal filtration through beds of iron oxide be undertaken. The Manager further agreed to cover the beds inside the works similar to those on the opposite side of Dawsholm Road, and Dr. Wylam is definitely of opinion that this plant should completely cut out all possibilities of any nuisance.

In recent days there has been a tendency for fishmongers to penetrate into the principal streets of the City, occupying situations which, by reason of congestion, are highly unsuitable for a business of this nature. When constructing the premises

no expense is spared in providing facilities for cleanliness, and giving the place an attractive appearance, but little attention is paid to ventilation. Even through-and-through ventilation is not adequate for such premises, because, depending on the direction of the wind, smells are shuttlecocked from front to back. The back may open into a narrow lane surrounded by high buildings with open windows or into a ventilating well for the whole property. Under such circumstances complaints are numerous. In one establishment, regarding which many complaints were received, there was a saloon between the front and back premises, with ventilating skylights. The roof of the saloon formed the bottom of a ventilating well, and the offices above received the emanations of the fish shop. A satisfactory solution was found in the erection of an 18-inch metal shaft carried 10 feet above the top of the building and the installation of a propulsion fan above the transom of the back door.

Reference is again made to the question of the abolition of ashpits, and the substitution of ashbins in lieu thereof. In the Partick area there are still scores of uncovered pits which are a prolific source of complaint. When conditions, structural or otherwise, present an opportunity of dealing with individual cases, action is taken to have the transference effected. This has been possible in over a dozen properties during the year, resulting in a considerable improvement, but the policy of a general transference should be pressed forward.

Rat and Mice (Destruction) Act.—A large provision shop in the Partick district was found to be rat infested. The occupier failed to take steps for their destruction, and a notice was issued specifying works to be executed to clear out the vermin and make the premises rat-proof. This included the substitution of a concrete floor in lieu of the existing wooden floor and the removal of wood lining from the walls. The work was duly carried out, and the premises are now free of vermin. During Rat Week twenty complaints of rat infestation were received and the properties visited. In all such cases of suspected premises appropriate advice was given. In addition, 1,244 leaflets and circulars were issued giving advice as to rat destruction, and, so far as ascertained, 358 rats were destroyed during that week. Structural Repair Notices were issued where necessary, and assistance was given in several cases, such as the use of smoke-generating machines and sulphur to smoke rats out of their runs and permit their slaughter.

In the autumn complaints were numerous regarding the presence of rats in and about the area south of Charing Cross. A thorough investigation was made. The range of old properties

on the south side of Bothwell Street was in the process of demolition, and it may be that the vermin had migrated from that locality and were seeking to establish themselves in the tenement properties in the vicinity to the north. In all the properties affected measures were taken to stamp out the rats, and these seem to have proved effective. A watch is still being kept on the area.

Complaints were received regarding the presence of rats in Stirling's Library, and the Office of Public Works appealed for assistance. A thorough examination from basement to roof was made and a plan of campaign suggested. All means of ingress *via* pipes, cables, &c., were thoroughly pointed with a mixture of bitumastic and pounded glass. After the pointing had firmly set each flat or department was disconnected, the linings of window breasts opened in places and the rats rooted out. Wall linings were then pierced and the space behind bombed with sulphur dioxide bombs. One place of egress was left purposely open and netted at the opening. The results were very satisfactory, and the building is now asserted to be cleared of vermin.

Fly Nuisance.—Complaints regarding the nuisance from flies were very numerous throughout the past summer. Having had experience of the fly nuisance in former years, and of the benefits derived from the weekly clansing of dungpits, the following Memo. was issued to the District Inspectors in June:—

“Although stable dungpits are not sprayed by our Department as in former years, each Inspector will please see that the contents of the pits are removed frequently and the pit thoroughly cleaned out—at least every ten days. The present spell of warm weather will tend to intensify the ‘Fly Nuisance.’ Each Inspector will please make a special effort to have all accumulations of refuse—especially decaying vegetable or animal matter—cleared away, inspect all cellars, basements, &c.—occupied and unoccupied—and have them cleansed and limewashed.”

Despite this work, complaints, as already mentioned, were numerous. No doubt the weekly visit and disinfection by the men from the Public Health Department had a marked effect in securing a thorough and regular removal and cleansing.

Farmed-out Houses.—There are 451 farmed-out houses on our register, 351 of one apartment, 99 of two apartments, and 2 of three apartments. The population consists of 993 adults and 339 children. The rentals range from 8s. 6d. to 15s. per week. They are mostly occupied by unemployed people. For instance, out of 396 houses visited, the occupiers of only 85 are wage

earners; of the others, 109 families are living on the Public Assistance Allowance, 105 on Unemployment Insurance Benefit, 64 on Army Disability Pension, Old Age Pension, and Widows' Pension, supplemented by grants from the Public Assistance Department. The remaining 33 have no regular source of income.

It has been asserted that farmed-out houses are occupied by families returned from Rehousing Schemes. This assertion is not supported by facts. Of the 396 tenants above referred to, only 19 have been in a Rehousing Scheme. Various reasons are given for their return, but, probably, failure to pay the rent is the main factor. Those who occupy farmed-out houses are seldom a day ahead with their finances. The rents are collected nightly, weekly, or fortnightly. The news vendor or hawker pays nightly, the person in weekly employment and those who receive Unemployment Benefit pay weekly. Those who receive from the Public Assistance Department pay fortnightly. Many of the farmed-out houses are in tenements which could be represented as unfit for human habitation. There are seldom any of the farmed-out houses unlet. The only redeeming feature is that, under the provisions of the Bye-laws, they are kept in a clean condition, and they are not overcrowded.

Tents, Vans, and Sheds.—As in past years, a number of showmen at the Kelvin Hall Carnival took up their usual stance for caravan dwellings in the Partick area. These were regularly visited to see that the Bye-laws were observed, but no contraventions took place. At the end of the year it was found that three families had taken up a location at Blairdardie on vacant ground owned by the Garscadden Estate. The colony consisted of two vans, a newly-erected shed, and a communal kitchen. The owners of the ground were unaware of caravans being located there, but had let the ground as a yard for the reconditioning of motor cars. The motor dealers are in search of a house in the vicinity. Meantime, as the position is isolated, no great harm is done.

Drainage.—In addition to the ordinary smoke testing and supervision of subsequent repairs, much new work has been carried out by the reconditioning of houses, providing modern bathrooms, &c. In the western part of the Division the construction of 65 tenements at Kelvinside Housing Scheme, 730 of the tenement and block type at Scotstoun West, 13 bungalows at Bearsden Road, and the extensions at Knightswood Housing Scheme, caused additional work. It is necessary to supervise most of the work of this nature as plumbers and builders tend to instal traps and fittings of designs not permitted under the Bye-laws. On representations being made, these have been changed.

The first section of the new Polytechnic building was opened on 2nd September; it presented certain unusual features as regards drainage. An engineering feat was accomplished in building the foundations. More than sixty million gallons of river water had to be pumped out during the course of construction. Solid steel sheeting lines the foundations with steel piles driven to a depth of 45 feet. There are nine floors in the building, two under the street level and seven above. The height of the building from the street is 105 feet, and to the sub-basement floor the depth is 26 feet from the street. The foundations are five feet thick, composed of steel grillage and concrete. This is the first building in Glasgow to have the sewage pumped from the sub-basement to the drain level. A Shone's Ejector of 75 gallons capacity is installed for this operation.

The new Hydrus valves for flushing water-closet basins have been fitted in all lavatories. This abolishes the need for a three-gallon cistern in every compartment, noise of the flush is eliminated, and does away with the waiting period for the refilling of the cistern. The restaurant kitchen is probably the largest in the City, and the fitments and contrivances are up-to-date, especially in the kitchen appliances. A new ventilating system has been installed throughout.

Housing.—No Slum-Clearance Scheme was undertaken during the year, although work was commenced on the preparation of an area to be presented at an early date. Several isolated tenements, embracing 56 houses, were represented, while the representation of basement houses was continued, 117 of these being put forward. This gives a total of 173 houses dealt with during the year. The few back lands remaining in this Division have been further reduced by the inclusion of those at 43 Duke Street and 32 Lancefield Street.

Considerable delay has been experienced in rehousing the occupants of houses represented due to the difficulty of finding suitable accommodation for elderly single occupants. Twenty of the houses are still occupied by single persons, and they resent being removed to any of the existing Rehousing Schemes. The provision of houses on the hostel system in a more central position has been advocated. Some of these single occupants are in houses represented as far back as 1931-1932. An appeal was lodged against a Demolition Order made on one of the tenements represented, but failed in the Sheriff Court. In the western part of the Division, especially, many large houses are rented and let in apartments, furnished or unfurnished, to separate occupants, the tenants residing elsewhere. It is not advisable to declare such to be farmed-out houses, although they

should be under special supervision. With the exception of better-class "Service Flats," they are being registered as houses let in lodging, in order to ensure that they are kept under observation to prevent overcrowding and secure separation of the sexes, and to secure cleanliness, periodical limewashing, structural repairs, provision of adequate w.c. accommodation and water supply, &c.

Apart from the houses officially declared to be farmed-out houses, there are in the divisional lists over 200 houses of the above type let in from 2 to 16 separate occupancies. The majority are above reproach from a sanitary point of view, others are not much above the ordinary farmed-out house, except that they are in more substantial tenements, and, in some cases, especially in basements, they are very unsatisfactory. The upper flats are let as service flats to single persons or couples, but the rooms in the basement are let frequently to separate families. These basement occupiers are permitted to use the back door only as a means of ingress and egress.

In a good many instances the owner or the principal tenant has been persuaded to cease letting the basement rooms for occupation, but others have refused. It may, ultimately, be advisable to deal with such houses under the Housing Act by representing them as unfit for human habitation.

Two families were found in occupation of tenement wash-houses as dwelling places. In the first case, in the vicinity of Charing Cross, the District Inspector found a man with his wife and two children occupying the wash-house in the basement. The place was fitted out with beds and other household furniture. On making enquiries, it was found that the family were ejected lodgers from a neighbouring house. When the owner was advised, he caused the squatters to quit and restored the wash-house to its original function.

The second case fell to be dealt with by the Police. Complaint was made by the occupiers of a Sauchiehall Street tenement that a family had taken up their abode in the old dilapidated wash-house in the court. The family consisted of a man, his wife, and one child. The child was taken over by the Authorities and the man and wife were sent to prison.

Rehousing Schemes.—The Scotstoun Scheme maintains a good record. During the year there were eight transfers of tenants within the schemes for more suitable accommodation, four tenants left for better houses outside the Rehousing Schemes, and three were evicted for back rent. Whiteinch Scheme has improved during the past year, and most of the tenants are doing their best to keep their houses clean and in

good condition. A number of changes took place in this scheme also, seven being evicted for non-payment of rent and others leaving to be nearer their work. During the summer the Curle Street tenants were plagued with flies, the breeding ground being the dungpits situated on the opposite side of the street. A number of the new tenants in both schemes needed close supervision for a time, but are gradually responding.

Bugs were found in 11 houses during the year, the tenants being able to clear their houses by their own efforts in all except one case.

The occupiers of Yorkhill Rehousing Scheme have maintained their usual good standard. Repairs are promptly reported and attended to, thus tending to keep the property in good condition. Bug infestation occurred under a picture rail, but was treated with success by the tenant. During the year there were two voluntary removals, two transfers within the scheme, and three new tenants who are proving satisfactory.

Inspection of School Children.—Experience shows that the condition of the school children inspected during the year has shown improvement in spite of the poverty due to unemployment, many showing a high standard of cleanliness. This is partly due to the issuing of free clothing to the necessitous cases, while the current vogue of short hair has greatly aided cleanliness.

WILLIAM ROY,

Divisional Sanitary Inspector.

14th April, 1934.

NORTHERN DIVISION.

Nuisances.—The nuisances dealt with during the year are set out in detail in the Appendix. They varied little in type from those of recent years, but it was noticeable that complaints with regard to infestation of premises by insects of various kinds were more numerous than formerly. Bugs (particularly these), fleas, beetles, spiders, flies, ants, and crickets all had a share of attention, and their unusual prevalence and activity were no doubt due, at least to some extent, to the prolonged dry summer of last year.

Reference may be made to the improvement effected in the condition of the Pinkston Burn—for long an extremely foul watercourse. The drainage from several tenements which

formerly discharged into this burn was diverted into the new sewer in Pinkston Road, and the burn itself, which at one time connected with the sewer that serves Cowcaddens and Woodside districts, now joins the Glebe Street sewer. The drainage of several villas in Auchinairn Road, which previously discharged through septic tanks into an old quarry hole nearby, was connected to the new sewer in Auchinairn Road. This alteration involved the provision of a new system of drainage for each house. The condition of the Molendinar Burn, now the most unsatisfactory stream in the Division, has been referred to in previous reports. During the warm summer months it had a great attraction for children in the neighbourhood, and, in spite of its foul sewage-laden condition, was extremely popular as a paddling pool. The covering-in of this burn is urgently needed.

Drainage.—The drainage of various housing schemes was supervised and tested before the houses were occupied, and additions and alterations to the drains, &c., of other dwelling-houses and of business premises also had attention. The smoke test was applied to 232 old tenements in connection with which drainage defects were suspected, and necessary repairs were thereafter carried out by the owners concerned. In five instances the drains were completely renewed, while in all 74 wash-down water-closets were installed in place of worn-out and insanitary fittings.

Overcrowding.—The overcrowded condition of many houses, especially houses of the smaller type, is still a problem for which no adequate solution has been found, and our records contain particulars regarding hundreds of overcrowded families. The policy adopted during the year of utilising vacated houses in rehousing schemes for the relief of overcrowding and the better housing of tuberculous cases is, within its limits, of considerable importance. The Minute by which the policy referred to is sanctioned, is in the following terms:—"The Manager was authorised to let to tenants of overcrowded houses, not condemned as uninhabitable, and who are not financially able to take an intermediate house, any houses in rehousing schemes at present occupied but which may be given up by the tenants, preference always being to overcrowded families where there are tuberculosis patients." This has already been the means of securing improved housing conditions for a number of necessitous overcrowded families, but it is becoming apparent that if the policy is to be completely effective it will be necessary so to control the occupancy of the houses from which such families are transferred as to ensure that they cannot again become overcrowded. In some cases it has been found that houses from which families have been rehoused have again shortly afterwards become overcrowded.

In connection with this subject, it is important to note that our rehousing schemes are not free from a degree of overcrowding. In Hamiltonhill, which is the oldest scheme, there are 728 houses, and of these 74 per cent. are of two apartments and 26 per cent. of three apartments. It is found that on a standard of three persons per room and sex separation at ten years of age, 130 (or 24 per cent.) of the two apartments and 25 (or 13 per cent.) of the three apartments are overcrowded. The following table shows the number of persons in the families occupying the houses in Hamiltonhill and the number overcrowded:—

Number of Occupants.	Two-Apartment Houses.	Three-Apartment Houses.
1	18	—
2	80	6
3	101	8
4	103	12
5	72	28
6	69	35
7	49	31
8	24	26
9	17	24
10	3	16
11	—	5
12	—	1
Totals, ...	<u>536</u>	<u>192</u>

Number of Houses Overcrowded, ...	130 or 24 per cent.	25 or 13 per cent.
Average Number of Persons per House, ...	4·4	6·7

In the foregoing table houses in which lodgers are the cause of overcrowding are not taken into account.

Reconditioning and Sub-Division of Houses.—Several self-contained houses were converted into service rooms, and a few of the older houses were modernised to the extent of having bathrooms and hot-water supply installed, but no sub-division of outstanding importance was carried out during the year.

Housing (Rural Workers) Act.—Two small houses in the Lambhill district were reconditioned. Water-closet and scullery accommodation was provided, as also a drainage system which discharges through a septic tank into field drains.

Slum Clearance.—The Garscube Road Clearance Scheme comprised 225 houses, and by the end of the year most of the tenants had been rehoused and the tenements demolished. In this scheme agreement was reached with all the owners concerned and a public enquiry was therefore unnecessary. An enquiry regarding the Garngad Clearance Area was held in November

by a Commissioner appointed by the Department of Health. The area includes 578 houses, and in all but 26 of these agreement with the owners was reached. Confirmation of the scheme has not yet been received. In this scheme the tenants of houses regarded as uninhabitable were allowed to sit rent free, after the buildings had been acquired by the Corporation, while those in houses regarded as habitable were called on to continue payment of rent. This arrangement caused considerable dissatisfaction among a certain section of the tenants.

Action with regard to the demolition of 266 houses was taken in terms of Section 16 of the 1930 Act. Of these, 119 have been demolished and 110 await demolition, 21 are not to be occupied again for human habitation, and 16 are to be rendered fit for habitation.

That many householders have a keen desire to secure improved housing conditions is apparent from the numerous complaints made regarding their houses by tenants in the neighbourhood of houses dealt with by Demolition Orders, the occupiers of which have been rehoused, and it is not always easy to make such tenants see that the policy of dealing first with the worst houses must be adhered to. Indeed, so great an attraction have the scheme houses for some people that instances are known of families who have gone deliberately into slums on the chance that they will in time qualify for new houses.

Rehousing.—At the end of the year 14 separate rehousing schemes, including 2,882 houses, were being supervised by the Health Visitors, and details of the condition in which the houses are kept will be found elsewhere in this report. All items of disrepair found in the course of visitation were reported to the City Improvements Department.

There are a few families who move between slums and rehousing schemes with some regularity. The movements of such families are not easily traced, but one or two examples may be given. (1) A family, consisting of the husband and wife and three children, were rehoused from a single apartment in a clearance scheme in April, 1925, and were evicted for non-payment of rent in May, 1926. They then procured accommodation in a house which was included in a later scheme, and in 1928 were again rehoused. In less than a year they left in arrears of rent. They were next found in another slum house which subsequently became the subject of a Demolition Order, and in July, 1933, were transferred for the third time to a scheme house. The family now consists of the husband and wife and six children. They are described by the health visitor as “always unsatisfactory.” (2) A couple—man and wife—were taken from

a farmed-out house and rehoused in November, 1928, but after four months were evicted for arrears of rent. They then took up residence in a tenement which was dealt with by Demolition Order, and in October, 1933, were again rehoused. They are described as having been "very destructive," and last month they were evicted for non-payment of rent. They then became lodgers with a single woman in another building which was dealt with recently by Demolition Order, and, with the landlady, are now the occupants of another scheme house and already a source of annoyance to their neighbours.

An investigation which was made regarding the occupancy of houses in the Germiston Scheme revealed, among other things, the extent of the movement of tenants away from the scheme. There are in Germiston 690 houses, 340 of two apartments and 350 of three apartments. Occupation of the houses, which commenced in August, 1928, was completed in March, 1932, and during that period 382 tenants left or were evicted from the houses. Of the original tenants 378 remain, and up to the end of last year 1,071 tenants in all had been rehoused in this scheme. The number of evictions from rehousing schemes because of arrears of rent would, it is suggested, be considerably reduced if a weekly collection of rents could be made the general rule.

Common Lodging-houses.—The common lodging-houses—six in number and all for men—were regularly inspected. They continue to be well conducted, and only a few minor irregularities called for attention.

Offensive Trades.—The retiral from business of a firm of tallow melters and soap boilers reduced the number of offensive trades carried on in the Division to 12. The firm referred to had carried on the business of tallow melters in the City since the year 1807.

Workshops and Bakehouses.—There are 525 workshops and 90 bakehouses on the registers. Routine inspections of these were made and action taken with regard to insanitary conditions discovered. Lack of cleanliness was the principal defect to which the attention of occupiers had to be drawn. 48 bakehouses and 31 workshops were found defective in this respect.

House-to-House Visitation, &c.—As in previous years, the examination of school children suspected to be dirty or verminous absorbed a considerable part of the time of the lady inspectors. 308 visits to schools were made, and 4,097 children were submitted for inspection. Of that number, 46 were found to be infested with vermin, 1,125 were slightly verminous, and 360 dirty, but

not verminous. Visits to the homes of these neglected children were made and the attention of parents or guardians drawn to any unsatisfactory conditions discovered. House-to-house visitation was undertaken in the poorer-class localities. 7,569 first visits were made, and 326 houses found to be in a dirty condition. In 111 instances the bedding was in an unsatisfactory state. Representations to the tenants concerned secured the necessary cleansing.

Sanitary Conveniences.—The following is a statement with regard to the number of common water-closets, privies, &c., as at 31st December, 1933:—

Nature of Convenience.	Number of Tenants served.					Total.
	1	2	3	4	5 or more.	
Water-closets,	—	1,533	5,667	2,031	451	9,682
Number of dwelling-houses with out inside sinks and Water supplies,	84	132	6	—	—	222
Dry closets,	45	11	—	—	—	56
Privy middens,	16	7	—	1	15	39
Ashpits,	—	6	5	2	408	421

As a result of slum-clearance operations there are, as compared with the previous year, 90 fewer houses without internal sink accommodation and water supply.

J. H. PATTERSON,

Divisional Sanitary Inspector.

4th April, 1934.

EASTERN DIVISION.

The various types of nuisances dealt with are shown in the Appendix. Complaints of bug infestations have been more numerous, and in quite a number of cases factors have been asked to instruct that wood facings around doors and bed recesses so affected be taken down and suitably treated before being replaced. No difficulty has been experienced in getting this work done, nor has there been any difficulty with tenants when asked to do their part—such as the scrubbing of bed-boards or the cleaning of furniture, pictures, or any other article of furnishing in which bugs were present.

The industrial depression has stimulated the home manufacture of certain commodities such as bleaching or cleansing liquids by the unemployed. It would appear that these are

readily sold, and quite a few people have taken to their manufacture within their dwelling-houses. The ingredients are best known to the makers, but when a complaint of nuisance was being investigated it was alleged that the smell was like ammonia. In the house below that of the complainer some cleansing or bleaching liquid was being made, and, as ammonia was one of the ingredients, it was concluded that the cause of the complaint had been discovered. Quite a number of people are known to be making a kind of bleaching liquor within their homes, but in the majority of cases the process seems to be inoffensive.

The demolishing of old motor cars is quite an established business now, and no doubt a necessary one, but can be very annoying to those living nearby. The general practice is to saturate the bodywork with petrol, afterwards setting it alight in an open yard. By this means the metal parts, which are said to be the only fittings of any value, are retrieved with the minimum of labour, but the smoke is dense and unpleasant. If this process is repeated daily, as it is in some yards, those who live in the vicinity have good reason for complaint. It should not be difficult to devise a less offensive system of demolishing, such as a form of furnace into which the cars could be placed, and, if provided with a brick-built chimney, the smoke would be emitted at a sufficiently-high altitude to avoid nuisance.

The Camlachie Burn, to a large extent, uncovered as it flows through an industrially-occupied area, and from time to time it is necessary to call upon the riparian owners to remove impeditive material from its bed. A large portion of the burn was cleaned during the year.

Quite a few basements under dwelling-houses have been found to contain sub-soil water. Such nuisances are difficult to discover, particularly when the only means of access to the basement is by a "trap door" in a dwelling-house. In most instances where this nuisance occurred it was accounted for by choked or broken field drains in the vicinity of the affected houses.

An old standing nuisance of a periodical nature, due to the occasional flooding after heavy rain of a piece of vacant ground which was too low to be drained to the public sewer and where the adjoining property owners were unwilling to permit of drainage through their drains, was dealt with by forming a rubble stone drain at the lowest point where the surface water collected. Since the drain was laid it has operated satisfactorily after heavy rain.

A few complaints of fumes from bakehouses situated under dwelling-houses and of overheated walls were investigated. The Glasgow Building Regulations Act provides that a dwelling-house constructed over a bakehouse from which effluvia, vapours, or fumes arise shall be separated from such bakehouse by a floor consisting of concrete or of other solid material; and where a chimney or flue has been constructed for domestic purposes and is used in connection with a baker's oven, the Master of Works has power to deal with both offences, and he was accordingly notified of the complaints.

Old clothes' markets have been in existence for years in the East-end, and at one time the articles exposed for sale consisted principally of men's suits and women's dresses or parts thereof, but within recent years body clothing or underwear and bedding have been added to the list. Some of these latter articles, and particularly bedding, were found to be in a filthy or verminous condition. When the person in charge of the market was warned, he ordered the destruction of all such articles, and gave an order to all those occupying stalls that in future no filthy or verminous bedding or clothing be exposed for sale. Regular visits have been paid to see that the order was obeyed.

Water Supply.—The majority of houses are supplied with water for cooking and domestic purposes direct from the water mains, but in the higher lands of the district storage cisterns are provided to ensure a constant supply. There are 1,053 dietetic water storage cisterns serving 556 tenement properties. These cisterns are inspected periodically and cleaned where necessary. Despite the fact that covers are provided to prevent contamination of the water, there are always a few found on inspection to be uncovered. The Water Engineer was notified about a complaint of sediment in a water supply, which was put right without delay.

Tents, Vans, Sheds, &c., used for Human Habitation.—The ground at 843 Gallowgate has now been recognised as a regular parking place for showmen's living-wagons, and, while it is rather small in extent for all the travelling showmen who prefer to be temporarily accommodated there, it prevents to a large extent many vans being placed in various stable yards, which are the only other alternative places to which showmen can go when making a halt in the City. The ground has been very well kept. There is ample water supply and also a suitable number of water-closets for the use of both sexes. The living-vans are spaced in accordance with the bye-laws. During the winter months there was a little congestion of the centre area of the ground caused by the parking of trucks containing showmen's

gear, otherwise the conditions have been satisfactory. During the year the Magistrates gave permission to showmen to occupy various sites as showgrounds for short periods. In all cases sanitary accommodation was provided and the grounds when vacated were left clean. Permission was given by the Corporation to five applicants in terms of Section 33 of The Glasgow Corporation Order, 1929, to use ground for the accommodation of living-vans. In each case only one van was involved. These applicants are principally road contractors, and when a number of their caravans are within their yards they prefer one to be occupied by a watchman.

Offensive Trades.—These trades are under constant supervision and the bye-laws are strictly applied. In two instances where the premises were not being kept reasonably clean a marked improvement has been recently observed. The dry, warm weather of last summer was very favourable for the propagation of flies, and it was therefore considered necessary to have a daily inspection of bone boilers' and tallow melter's premises for the purpose of seeing that the raw material was sprayed with an insecticide to prevent the breeding of flies. Two new businesses were established with the sanction of the Local Authority—one for a soap boiler and the other for a tanner. The former is being carried on in an existing tallow melter's premises and the latter is an extension of an old-established tannery. Three licences lapsed during the year, and have been removed from the register for the reason that the businesses had been discontinued for a period of over 12 months. The Public Health (Scotland) Act, 1897, Section 32 (6) provides for this contingency. The businesses referred to were respectively—a skinner and hide factor's, a gut cleaner's, and a tallow melter's. The number of offensive trades on the register at the end of the year was 43.

Common Lodging-houses.—There are 11 such houses—six for males and five for females—and the total number of beds provided is 2,464. Of that number 674 are open beds, 277 are of the "bunk" type, and 1,513 are in cubicles. The houses are as a rule clean and well kept. Those for females are, with one exception, not so modern in equipment as the men's. The majority of the female lodging-houses are in old buildings reconditioned for the purpose, and being small, they lack the accommodation of the modern house for reading, recreation, or social events. The exception above referred to is provided with all that accommodation, and is constantly maintained in a high standard of efficiency. No overcrowding was discovered, nor were there any serious contraventions of the bye-laws in other matters.

Farmed-out Houses.—Seven houses were registered as farmed-out houses during the year, making a total of 110. The slum-clearance operations in the Calton district were the means of reducing the number of such houses considerably. The majority are occupied by families, many of whom have been there for years, and should a family increase in number the farmer has no desire to retain them as tenants. The difficulty is that, as such tenants do not possess a rent book, factors are not inclined to allot houses where a prospective tenant cannot produce something in the nature of a rent book, which is apparently taken as an indication of ability to pay rent. Frequent inspections have been made to see that the standard of furnishings, where these are provided, was maintained, and to enforce compliance with the bye-laws generally where necessary.

Slum Clearance.—All the houses in the Calton Improvement Scheme have been demolished and the full complement of new houses erected on the cleared sites will be completed shortly. A few of the newly-erected tenements have been occupied for some months. The work of demolishing 131 houses in the Old Shettleston Road Clearance Scheme is in process. About 30 families took up residence in closed houses in this scheme after the original tenants had been rehoused. The majority, however, left when warned, and the few remaining are being dealt with by the Director of Housing. Progress is also being made with the demolition of 168 houses in the Landressy Street Clearance Scheme. In the Dalmarnock Ward a clearance scheme, consisting of 447 houses, was represented, and 260 houses in various parts of the Division were dealt with by Closing or Demolition Orders as being unfit for human habitation, and not capable at a reasonable expense of being rendered fit. Of the latter, 38 have been closed and 56 demolished.

Rent Restrictions Acts. — 14 applications by tenants of dwelling-houses for certificates were received, and of these 12 were granted and 2 were refused. The applications by landlords for reports in terms of Section 5 (2) of the 1923 Act numbered 9, and all were granted.

Rehousing Schemes.—During the year 582 houses were completed for occupation, consisting of 144 two-apartments, 378 three-apartments, and 60 four-apartments. The total number of houses in such schemes is 3,046, all of which are subjected to a systematic inspection for the purpose of maintaining a reasonable standard of cleanliness.

Reconditioning of Houses.—Nine houses were reconditioned for the purpose of providing baths, and this work necessitated a reduction in the number of apartments in five houses. The

remaining four houses had the necessary space for baths within the existing w.c. compartments, and consequently the living-room accommodation was not affected. All the nine houses had been unoccupied for some time, and the reconditioning was done by the landlords in the hope of attracting tenants.

Provision of New Houses.—In addition to the 582 houses provided in rehousing schemes, there were completed 418 ordinary houses and 126 of the “intermediate” class. Of the former, 338 were three-apartments and 80 were four-apartments. Of the latter, the respective figures were 110 and 16.

House-to-House Visitation, &c.—The work of the nurse inspectors includes the examination of school children suspected by schoolmasters to be verminous or dirty, house-to-house visitation in special districts, and the supervision of home conditions in rehousing schemes. The number of visits paid to schools was 556, and of the 11,120 children examined 141 were found to be infested with vermin, 1,988 were slightly infected, and 448 were dirty. When the home conditions of the children affected were inspected, it was found that 125 houses were dirty and that in 126 cases the bedding required cleansing. The number of visits paid to houses in special districts was 5,341, and 343 dirty houses and 42 cases of dirty bedding were dealt with.

Drainage.—It is satisfactory to report that the new 18-inch pipe relief sewer, which the Master of Works caused to be laid in the Tolleross district in consequence of periodical flooding of land and houses after heavy rain, and which has now been functioning for fully a year, has been successful in preventing a recurrence of the flooding. The drainage and plumbing systems of old properties were smoke-tested on 191 occasions because of suspected defects in these systems. In the same connection 716 tests were made of new buildings. As a result of these tests, 104 defective systems in old buildings were discovered and were subsequently made good. The number of wash-down water-closets substituted for obsolete patterns and for privies was nine and seven respectively. Five of the privies were in business premises and two were in connection with small cottages on the outskirts of the City.

Factory and Workshop Act.—The number of homeworkers on the register is 54, and all were found clean when visited. The usual visits were paid to bakehouses, workshops, and workplaces, and where contraventions of the statute were found these were dealt with.

Ticketed Houses.—These houses are being reduced in number each year as the result of slum-clearance operations. At the end of the year there were 2,444—a reduction of 296 since the previous year—and to each a night visit was paid, when it was discovered that 427 were overcrowded by from one child under 10 years of age to five adult persons in excess of what is permissible. Three of the worst cases of overcrowding in single-apartment houses had five persons in excess. A large number of the people who occupy such overcrowded houses cannot as yet better their housing conditions, and “ticketing,” therefore, is useless meantime as a prevention of the evil. Several houses in rehousing schemes were visited during the night by request of the Manager of the City Improvements Department where lodgers were suspected, and he was duly informed of the results of these visits.

Water-closets and Sinks used in common.—The number of water-closets used in common by two or more tenants has again been reduced. At the end of the year there were 9,430, of which 1,256 serve two tenants, 6,110 serve three tenants, 1,729 serve four tenants, and 335 serve five or more tenants. The houses without inside sink accommodation have also been reduced to 97 of one-apartment, 47 of two-apartment, and 7 of three-apartment. The approximate number of houses provided with baths is 12,966, or about 25 per cent. of the houses in the Division.

General. — Details of other activities are shown in the Appendix.

A. STIRLING,

Divisional Sanitary Inspector.

February, 1934.

SOUTH-EASTERN DIVISION.

The general sanitary condition of the Division continues to improve, and, while this is due in large measure to the operations carried out in recent years under the Housing Acts, by which congested areas have been opened up and old and decayed tenements have been demolished, there is no doubt that a more enlightened public opinion is also having its effect. While there are now many educational facilities on sanitary matters available to the public generally, obviously much can be, and is being, accomplished in this direction by the staff in the course

of their daily duties which bring them so intimately in contact with the individual members of the community. That this influence is felt and appreciated is shown by the increasing frequency and freedom with which the Department is consulted.

Nuisances.—The nuisances dealt with are detailed in the Appendix. These were as usual of a varied nature. Several call for special comment because of their general interest.

Smells experienced in a ground-floor room of a semi-detached villa had a curious and unusual source. Although no gas was used in the house, all internal gas pipes and fittings having been removed and the lighting, cooking, &c., being done by electricity, the occupier believed that the smells were due to an escape of gas, and concluded that there must be an escape from some pipe supplying a street lamp. Prolonged and fruitless investigation had been made by the Gas Department. Enquiries showed that the smells were only experienced after lighting-up time, which at that particular period of the year was about nine o'clock at night. The house was visited shortly before that hour, and within about ten minutes after lights were on a very decided smell was experienced in the room complained of, but nowhere else, either inside or outside. It was soon evident that the cause was not coal gas. It rather resembled stale fish, and so pervaded the room that it was impossible to trace it to its source. The coincidence of its appearance with the putting on of the electric light was verified during the day, the smell appearing about ten minutes after switching on the electric light. The experiment of removing the fittings to an upstairs bedroom was next tried with the same result, thus demonstrating that the smells were in fact emanating from these fittings. It was probable that the bulb-holders and other parts were made of some composition suggestive of an admixture of fish glue, and that the heat from the bulbs or lamps had a slight smelting effect on them, thus giving rise to the smells.

Complaints of larvæ, reported on examination to be of the non-biting midge species, found in the cold-water supply of several houses in the King's Park area were also investigated. As there were no storage cisterns in the houses affected and no complaints were received from other areas with the same source of supply, it was difficult to account for the presence of larvæ. Their disappearance, probably due to the developing period having passed, prevented further investigations.

The completion in the early part of the year of the piping of a portion of Mallsmire Burn at the point of overflow from the Aitkenhead Road sewer has removed a most objectionable nuisance which was the cause of many complaints last year.

The objectionable practice of tenants throwing waste food-stuffs and other refuse from windows on to the surfaces of backcourts and roofs of outbuildings still continues, notwithstanding efforts to discourage it. In one instance a tenant persistently complained of the nuisance, and the aid of the Police was sought in an effort to detect the culprit. It was discovered that the complainer was herself guilty. A prosecution followed, and the imposition of a fine of ten shillings had a most salutary effect.

Nuisances arising from chokage or other defect in private drains or sewers serving a number of properties separately owned frequently cause considerable trouble. Purchasers of such properties—which are usually of the self-contained or terrace type of dwelling-house—seldom make any inquiry as to the drainage arrangements beyond satisfying themselves that the internal fittings are in order. When any nuisance does arise because of the development of some defect in the mutual drainage system, they are, in consequence, difficult to convince that they have an equal responsibility with the other joint-owners. Particularly is this the case when flooding, due to a chokage, occurs in a neighbour's premises and not in their own, owing to a difference in levels. Several cases of this kind have occurred lately, resulting in considerable delay in having the nuisance removed.

These are but an indication of the varied nature of the nuisances dealt with, but fuller details of the number removed will be found in the Appendix.

Water-closets, Sinks, and Baths.—The number of water-closets used in common by two or more tenants is now 5,769, a reduction of 17 during the year—1,029 serve two tenants, 3,133 serve three tenants, 1,266 serve four tenants, and 341 serve five or more tenants. Houses without inside sink accommodation are now 79 of one apartment and 75 of two apartments. The number of houses with baths is approximately 24,700.

Privies.—There are now 39 pan privies and 9 privy middens serving the tenants of dwelling-houses. Of the former, 21 serve one tenant, 10 serve two tenants, 3 serve three tenants, 1 serves four tenants, and 4 serve five or more tenants; and of the latter, 1 serves one tenant, 4 serve three tenants, 1 serves four tenants, and 3 serve five tenants.

Ashpits.—Ashpits now number 166, of which 6 serve two tenants, 2 serve three tenants, 7 serve four tenants, and 151 serve five or more tenants.

Drainage.—In connection with drainage work, 5,959 visits were made, and the smoke-test was applied on 1,157 occasions. The work included the supervision and testing of the drainage and plumbing systems of all new properties, including the new Shawlands Secondary School, alterations and additions to Crossmyloof School, and two new picture houses.

Prosecutions.—Two tenants who kept their houses in a dirty condition, and persistently refused to clean them notwithstanding many warnings, were prosecuted. In one case a fine of ten shillings was imposed, and in the other, owing to five previous convictions, a fine of two pounds was imposed. Within three months of the latter conviction the tenant again allowed his house to get into a filthy state, and on being brought before the court a second time was fined a further two pounds. Five other tenants were also prosecuted for failing to comply with the bye-laws regulating the cleaning of closes, stairs, &c. On conviction, three were fined ten shillings each, and one was fined ten shillings and sixpence. In the remaining case the accused failed to appear, and a warrant was granted for his apprehension. On being apprehended, he was allowed out on bail of twenty-one shillings, but on failing to appear in court again his bail was forfeited.

Housing.—The properties at 89 and 91 Commercial Road, on which Demolition Orders were made last year, have now been demolished, the 29 tenants still in occupation at the beginning of this year having been rehoused.

Of the 74 houses in Pollokshaws on which Demolition Orders were made last year and which had been closed, 65 have now been demolished, and 9 cannot be demolished because of their situation in properties in which there are other premises. Of the three other houses which were still occupied at the beginning of this year, all have been vacated, the tenants having been rehoused, and two of them have been demolished. The remaining one cannot be demolished because of its situation. The house on which an undertaking not to use for human habitation had been accepted, but which was still occupied at the beginning of the year, has now been converted to business premises. A house at 460 Lawmoor Street, on which a Demolition Order was made in 1931, has now been closed but cannot be demolished, being on the ground flat of a tenement.

This year 131 uninhabitable houses were represented, and of these eight have been closed, but cannot be demolished because of their situation. The tenants of the remaining 123 houses have not yet been rehoused. In addition to the foregoing, six

uninhabitable houses have been closed voluntarily by the owners, and four of these have been demolished to permit of the extension of business premises.

Reconstruction of Houses.—Two five-apartment houses on the top flat of a four-storey tenement which had become unoccupied and could not be re-let although they had quite good light bathrooms were “made down” by the owner into three three-apartment houses with bathrooms and sculleries. On the work being completed, the houses were almost immediately let, and it is understood to be the intention of the owner to carry out a similar reconstruction of the houses on the other flats of the property should they become vacant. A shop in another property also vacant, with no likelihood of its being re-let for business purposes, was also reconstructed by the owner into a three-apartment house with bathroom and hot and cold-water supply, and is now occupied.

New Houses.—During the year 440 new houses have been built and occupied. Of these, 189 were built by the Corporation, and consist of 144 of three apartments, 44 of four apartments, and one of five apartments. The other 251 were built by private enterprise, and consist of 201 of four apartments and 50 of five (or more) apartments.

Relhousing Schemes.—There is a total of 744 houses in the four schemes in this Division. Two houses were unoccupied at the beginning of the year. Of the occupied houses, 710 were clean, 31 fair, and one dirty. During the year 13 of the clean houses had to be transferred to the “fair” category, but this lapse was more than counterbalanced by the improvement in the houses formerly classed as “fair”—20 of these having been improved so much as to justify being raised to the “clean” class. The dirty tenant has not yet shown any tendency to improve, and is only maintaining a reasonable standard under supervision. A considerable amount of disrepair in the houses is still being encountered, much of it obviously due to carelessness of the tenants themselves. Forty-two tenants removed throughout the year. Twelve of these were ejected for non-payment of rent. Of the remaining 30, only three are known not to have returned to inferior housing conditions. The majority of these tenants kept clean and satisfactory houses, and have been in occupation over a period of years, so that it would not appear to be dissatisfaction with their houses that has caused them to remove. The likely reason is that they were unable to continue paying the rent and preferred to remove before getting into arrears, which would ultimately have resulted in ejection. Although the percentage (5.6) of ejections and removals is not

large, it is nevertheless to be regretted, as in going back to their old housing conditions they are sure to lose the sense of "house pride" acquired in the rehousing schemes, and to lapse into careless habits of housekeeping.

DUNCAN THOMSON,

Divisional Sanitary Inspector.

29th April, 1934.

SOUTH-WESTERN DIVISION.

The erection at CardonaId and Hillington of 2,000 houses by private enterprise for letting and the big increase in the number of unoccupied pre-war tenement houses of three or more apartments, as disclosed by a survey made towards the end of the year, are outstanding features. Otherwise, conditions were unchanged from last year. Overcrowding, principally by members of the family only, persists, particularly in houses of one and two apartments. There are indications that overcrowding caused by the presence of lodger families in two-apartment houses is decreasing. In this connection reference is made to three selected streets which were made the subject of special study, as described in previous reports. In these streets, during the more acute stages of the housing shortage, overcrowding was abnormally high, but a definite reduction is now evident. Intermediate houses for the relief of overcrowding continue to be erected at West Drumoyne. Slum clearance is proceeding normally. The making-down of large unoccupied tenement houses into more and smaller modernised houses has been carried out in a few instances; an objectionable method of making-down as met with in one tenement is described. The rapid increase of unoccupied houses of three or more apartments and the provision of still more houses of this class emphasises one of the changes in housing fashions noticeable in the housing outlook as a whole.

House drainage continues satisfactory; all tenement property is provided with water-closet accommodation; houses without inside sinks and water supply were reduced to two; sanitary conveniences used in common decreased slightly and ashpits again showed no change.

Details of the routine work will be found in the Appendix (Table XXIII).

Nuisances.—Compared with the previous year, nuisances show a decrease, due in part to the continued fine weather of 1933.

The public utility works which have figured in the last three Annual Reports because of their undue contribution to atmospheric pollution again received special attention, and the observations made go to show that the improvement already recorded consequent on the installation of the dust arrestors last year has been maintained.

A nuisance of an unusual nature occurred in the warm weather in May. A ship from overseas arrived at Prince's Dock with a part cargo of 50 tons (600 bags) of bones consigned to manure manufacturers in a neighbouring town. Unloading started at eight in the morning, when it was found that the bones and bags were swarming with maggots, and by mid-day insects had crawled from the dock sheds across a roadway 40 feet wide, over a wall 13 feet high, and on to and across a public street 60 feet wide, and threatened to invade shops and houses on the side of the street remote from the docks. To get in touch with the consignees, explain fully the situation to them, and insist upon the immediate removal of the nuisance meant the loss of valuable time, and, as the matter was urgent, the Corporation Fire Brigade was requisitioned, the wall and road surfaces drenched with water under pressure, and the maggots thus cleared away and washed into the public sewers. The maggoty bones were later removed in motor lorries specially equipped for the purpose by the consignees to their works for disposal, and thereafter the dock roadway and floors of the sheds were swilled and swept clean.

Nuisance by the emission of fumes during the night from a pitch heater and mixer used in the manufacture of road materials in premises bordered by two new housing schemes called for action, and certain simple alterations carried out on the plant were such as to remove the cause of complaint.

In certain directions of the wind and in a humid atmosphere, the emission of white acrid fumes from the chimney-stalk of a zinc-recovery plant at a galvanising works caused material discomfort to the inhabitants of the adjacent densely-populated area. After observations, the matter was referred to the Department of Health for Scotland's Chief Inspector under the Alkali, &c., Works Regulation Act, at whose instigation the owners carried out remedial measures, resulting in a definite improvement. Nuisance of a somewhat similar nature, also referred to Dr. Wylam, arose through fumes from a chemical works finding

their way into, and causing annoyance to the employees of, a nearby clothing factory. The cause of complaint was removed. The other nuisances were of the kind usually met with in large urban communities, and do not call for comment.

Drainage.—House drainage continues satisfactory. Relaxation of the drainage bye-laws, particularly as to the trapping of waste drains is almost the rule in new houses, subject, of course, to the sanction of the Dean of Guild Court. This is in keeping with modern sanitary practice, but the gradual extension of relaxation in some other directions tends to bring the bye-laws into contempt. The new draft code of drainage bye-laws actively engaging attention, when confirmed, should make for stability and efficiency.

Sanitary Conveniences used in common.—Water-closets used in common again show a slight decrease, being 15 fewer than in the previous year; the numbers serving 2, 3, 4, and 5 or more tenants are 1,082, 1,892, 1,111, and 340, a total of 4,425. Dry-closets and privy-middens used in common are still 4 and 2 respectively. Ashpits used in common number 1,471, a decrease of 3 as compared with last year, and of these 1 serves 3 tenants, 10 serve 3 and 4 tenants each respectively, and 1,451 serve 5 or more tenants. Houses without an inside water supply and a sink show a further reduction of from 4 to 2 during the year. Eight new additional water-closets were introduced.

Common Lodging-houses.—The Sailors' Home in Burndyke Street, Govan, technically a common lodging-house, was closed during the year, and the number of "models" now on the register is four. They are well conducted; the supply of beds continues to exceed the demand.

Farmed-out Houses.—The attempt to revive unregulated farming-out of houses referred to in last year's Report was abandoned, but only after three houses had been declared farmed-out houses, whereupon, on steps being taken to enforce the bye-laws, the owners, rather than comply with these, evicted the tenants, and thereafter applied to have the houses removed from the register, which was done. At the end of 1933 the number on the register was 12, being the same as in the previous year.

New Houses.—2,543 new houses were erected, compared with 645 the year before, of which 620 were Corporation houses. Of this year's total houses, 2,246 were built at Cardonald and Hillington by private enterprise for letting, and 280 of the "intermediate" type (for the relief of overcrowding) at West Drumoyne by the Corporation.

Converted Houses.—Four houses of two apartments each, closed under the Housing Act, 1930, as unfit for human habitation, were reconstructed internally and converted into two habitable houses of two, but considerably larger, apartments each, with a separate water-closet for each family.

Houses Closed and/or Demolished.—Twenty-six houses closed under the Housing Act, 1930, pending demolition at the end of 1932, have been since demolished, and, in addition, 59 houses, also dealt with under the said Housing Act, have been either demolished or closed against human habitation. One house was demolished to make way for business premises and two houses were converted into shops. In pursuance of the policy of the gradual replacement of the wooden houses by houses of permanent structure, 26 Corporation wooden huts were demolished, the displaced tenants being offered alternative accommodation in newly-erected (additional) houses in Corporation schemes.

Repair of Houses.—One notice under Section 14 of the Housing Act, 1930, was served upon the landlord of a house which was in disrepair and capable at a reasonable expense of being made fit for human habitation, and the necessary work was done by the owner. In addition, intimations under Section 19 of the Public Health Act regarding disrepair or dampness in 2,369 houses were attended to.

Rehousing—Whitefield Road Rehousing Scheme.—The 114 houses in this scheme were visited at frequent intervals, and 113 are recorded as clean and one as fair, the same as in the previous year.

Sub-divided and Modernised Houses.—Complete or partial conversion of centrally-situated tenements of unoccupied houses, too large to find a letting market, into more and smaller houses (usually of two and of three apartments) with modern amenities, including a light bathroom, hot-water installation, interior grates and electric light, and also redecoration, resulted in 11 houses being converted into 19 houses in four different tenements, but in one instance only were the whole of the houses in the tenement made-down and modernised.

In view of the prominence which “reconditioning” (as locally understood), as a contribution towards the solution of the problem of the housing of the working classes, is receiving, it may be fitting to refer somewhat fully to what has been done in these cases.

The first tenement dealt with was of three storeys and basement, consisting originally of six houses. On each of the upstairs flats there were two houses of five apartments each. The apartments (10) of both houses were pooled, and one was converted into two bathrooms, and the remaining nine so re-allocated as to form three houses of three apartments each on the flat. The reconditioning effected was as follows:—Eight new bathrooms were provided (four in the manner just referred to, two by partitioning off portions of large rooms, one by utilising space formerly taken up by a stair, and one by converting a room entirely for this purpose). New water-closet basins, porcelain enamelled iron baths, wash-hand basins, sinks, and hot-water and electric-light installations were provided in all (eight) houses; interior grates substituted for ranges in kitchens, and new grates and mantelpieces fitted in all other rooms; windows slapped in external walls of four new bathrooms; new entrances formed to six houses and four rooms; areas of stair landings enlarged; soilpipes and wastepipes renewed and drains reconstructed; and the basement apartments of one house converted into a wash-house and store. The annual assessable rentals of the six original houses were as follows:—Two at £28 15s., two at £29 18s., and two at £31, a total of £178 10s.; the rents of the eight made-down houses are as follows:—Two at £28, two at £30, two at £32, one at £34, and one at £36, a total of £250, an annual increase of £71 10s.

In the second tenement, a four-storey one of eight houses, two houses, each of four apartments, on one flat were converted into four houses—two of three apartments each and one of two apartments. One flat only was dealt with, but the others are expected to be gone on with shortly. Substantially, the reconditioning was of the kind effected in the previous tenement. No information is available as to the new rents.

A four-storey tenement, of business premises and three houses, had two five-apartment houses altered so as to form four houses—two of three apartments and two of two apartments each. Bathrooms were formed in the three-apartment houses by partitioning off portions of rooms for that purpose. New water-closet basins, baths, wash-hand basins, and hot-water installations were

introduced. A combination bath and basin was fitted in the existing water-closet compartments of the two smaller houses. New soilpipes and wastepipes were provided and the drains overhauled. No information is available as to the new rents. Two houses "reconditioned" at Whitsunday had not been occupied by the end of the year, and within that period, in one of the others, there had been a change of tenancy.

The fourth instance was in a three-storey tenement consisting originally of six houses (two on each flat). Three houses only (one on the flat, 1 up, and both on the flat, 2 up) of six apartments were altered to six houses of three apartments each. New bathrooms were formed in three houses; water-closet basins, porcelain-enamelled iron baths, wash-hand basins, hot-water installations, and interior grates were provided in three houses, and the soilpipes, wastepipes, and drains reconstructed. The annual assessable rental of the three original houses was £51 each, a total of £153, and of the six sub-divided houses £32 each, a total of £192, an increase of £39 a year. In this property, to begin with, each house of six apartments was divided, lengthwise, practically into two equal portions (north and south) by a wide central hall or lobby (running east to west). The making-down consisted of building up the doors in the north side of the hall or lobby on each flat, thereby forming the south made-down house (of three-apartments), and forming the north one (also of three apartments) by encroaching on so much of the floor space of the north rooms and partition walls as would allow space for a new lobby, building a new dividing wall to complete the new lobby, and partitioning off a portion of a large room for a new bathroom. In short, two back-to-back houses were fashioned out of each house by the erection of a central wall running the length of the house. When the proposal to make-down these houses was first mooted and the advice of the Department sought (it is now the general practice of architects or others interested where such alterations are contemplated, and before plans are submitted to the Dean of Guild Court, to consult the Department in the first instance), objection was taken to it, and an alternative method suggested, but the original plan was adhered to. While it would appear that the law, as it stands, is not sufficient to prevent plans of this kind being passed, it is ground for satisfaction to know that the new Provisional Order being promoted contains

powers to check sub-division of this kind, and provides other safeguards against the indiscriminate making-down of houses.

Unoccupied Pre-War Tenement Houses.—In view of the recent apparent increasing number of "to let" boards affixed to tenement property and the frequency of removals observed in the Division (the average output at the Cardonald and Hillington Housing Schemes during 1933 was six new houses for each day of the year), it was considered desirable to ascertain with some degree of accuracy the effect of these changes on housing in the Division generally. Accordingly, in the first fortnight of November a survey of empty houses was made. The compilation of the figures was not completed by the end of the year, but, while details are not available, it can, however, now be definitely stated, though in general terms, that the survey showed that no houses of one or of two apartments are empty, and that a marked increase has taken place in the unoccupied pre-war tenement houses of three or more apartments.

Sub-Letting of the Room of the Room-and-Kitchen House.—During the acute stages of the housing shortage and as lately as 1926, it was an almost everyday experience to find instances of the room of a two-apartment house being let to a lodger family, due, primarily, to the inadequate housing accommodation and, incidentally, to unemployment, which resulted in families dispossessed of their houses being huddled in houses already containing or exceeding their complement of inmates. The tenant (in most cases unemployed) received rent for the room, often not less in amount than that paid by him for the whole house, and this was looked upon by him as value for services rendered. The gradual increase of new houses tended to lessen the tension of the housing situation. Coincident with this improvement, the Public Assistance Department came to regard the rent received from sub-letting as a source of the tenant's income to be taken into account in the allocation of his public relief, whereupon the tenant, deprived of his profit, not unnaturally perhaps proceeded to get rid of the lodger family. Both these circumstances have had a bearing on the reduction of the lodger overcrowding, and while the provision of "housing" and "intermediate" houses did not absorb all the lodger families, still it set free other houses, and to that extent relieved the situation.

As evidence of this, the following figures regarding the decline in this kind of overcrowding in three selected streets, where dual occupancies of two-apartment houses reached a very high level a few years ago and where conditions in this respect have now almost reverted to normal, are submitted:—

TABLE SHOWING THE NUMBER OF DUAL OCCUPANCIES IN
553 TWO-APARTMENT HOUSES IN THREE SELECTED
STREETS IN GOVAN WARD AS AT 1926, 1929, AND 1933.

Street.	Total Houses in Three Streets.	Two- Apartment Houses.	Two-apartment houses with rooms let to lodger families.		
			1926	1929	1933
X	212	184	63	53	20
Y	120	77	20	5	6
Z (Part of)	368	292	53	43	15
	<hr/> 700	<hr/> 553	<hr/> 136(24%)	<hr/> 101(18%)	<hr/> 41(7%)

The above table shows that two-apartment houses with two families fell from 24 per cent. in 1926 to 18 per cent. in 1929, and that in 1933 they had declined to 7 per cent. of the total room-and-kitchen houses in the three streets. It may be recalled that out of 615 one-apartment houses surveyed last year, where there had been 236 removals, 33 per cent. of the new tenants came from lodgings.

Rent Restrictions Acts.—One application by a landlord for a report and 27 by tenants for certificates were received and granted, compared with seven applications for certificates last year.

Many very small houses have been registered as decontrolled, and in this connection mention is made of one tenement with some thirty one-apartment houses under one roof, all of which are so registered. These houses show evidence of disrepair, but a tenant before he gets possession of one of them must agree to the following inequitable conditions of let printed in his

rent book, viz.:—"Conditions of Let. Rents payable weekly always in advance. It is thoroughly understood that this house is only let for One Week, and if the rent is not paid on the day when due, the tenant undertakes to leave at once without any legal warning away or process of removal, or be subject to be ejected with expenses at once; also the Tenant takes the house as it stands. Deposit for key, 1s." In addition, he must pay a deposit of £1 before he enters the house, the weekly rent and rates of which amount to 7s. 4d. (£19 a year for an unfurnished house of one apartment).

These conditions of let are contrary to the Housing Acts, which provide that in any contract for letting for habitation a dwelling-house at a rent not exceeding twenty-six pounds there shall, notwithstanding any stipulation to the contrary, be a condition that the house is at the commencement of the tenancy, and an undertaking that the house will be kept by the landlord during the tenancy, in all respects reasonably fit for human habitation. The Rent Restrictions (Amendment) Act, 1933, gives power to make regulations prescribing matters as to which notice by landlords is to be given to tenants of controlled houses, and these regulations enact that every rent book or similar document of a controlled house shall contain, among other information, notice of the tenant's right to have repairs carried out and the name and address of the Sanitary Authority. The facts concerning the decontrolled houses just referred to afford ground for suggesting that, in respect of decontrolled houses with rentals not exceeding twenty-six pounds a year, the owner should be obliged to inform the tenant, either by special notice or by an entry in his rent book, of the protection afforded by the Housing Act at the commencement of, and during, his tenancy, and also of the name and address of the Sanitary Authority.

Offensive Trades.—The establishment of the business of hide factor was sanctioned in premises adjoining those in which there already existed one of this least harmful of offensive trades. Businesses were well conducted throughout the year.

Factories and Workshops.—Regular inspection was carried out at workshops and workplaces and at such factories as are

usually visited, and apart from a few acts of neglect, mainly with regard to limewashing, which were duly attended to, sanitary conditions were satisfactory.

Rat Destruction.—Rat Week was duly observed and made for general concerted action in the destruction of rats, which has long been a matter of daily routine.

Burial Grounds.—The three burial grounds were satisfactory. Permits for relaxation of the bye-laws were granted in nine instances.

JAMES REID,
Divisional Sanitary Inspector.

16th March, 1934.

APPENDIX.

TABLE I.—GLASGOW, 1933.—ESTIMATED POPULATION IN EACH MUNICIPAL WARD, ACREAGE, AND PERSONS PER ACRE.

MUNICIPAL WARDS.	POPULATION.				Acreage.	Persons per acre (including Institutions and Shipping).
	Without Institutions and Shipping.	Institutions.	Shipping.	Total.		
1. Shettleston and Tollcross, ...	41,095	156	—	41,251	1,061	39
2. Parkhead, ...	37,473	1,248	—	38,721	883	44
3. Dalmarnock, ...	35,782	27	—	35,809	288	124
4. Calton, ...	27,036	2,371	—	29,407	333	88
5. Mile-end, ...	21,393	—	—	21,393	191	112
6. Whitevale, ...	21,760	221	—	21,981	176	125
7. Dennistoun, ...	26,354	334	—	26,688	280	95
8. Provan, ...	40,871	1,017	—	41,888	1,293	32
9. Cowlairs, ...	21,289	1,763	—	23,052	456	50
10. Springburn, ...	22,544	3,265	—	25,809	2,748	9
11. Townhead, ...	25,340	1,629	—	26,969	175	154
12. Exchange, ...	13,859	2,044	7	15,910	289	55
13. Blythswood, ...	10,543	2,122	11	12,676	242	52
14. Anderston, ...	24,984	984	806	26,774	422	63
15. Sandyford, ...	18,902	492	—	19,394	152	127
16. Park, ...	19,451	227	—	19,678	272	72
17. Cowcaddens, ...	34,612	713	1	35,326	488	72
18. Woodside, ...	31,954	905	—	32,859	170	193
19. Ruchill, ...	41,728	1,218	2	42,948	1,766	24
20. North Kelvin, ...	21,107	60	—	21,167	146	145
21. Maryhill, ...	25,966	817	4	26,787	1,391	19
22. Kelvinside, ...	25,247	939	—	26,186	1,127	23
23. Partick (East), ...	27,305	1,173	—	28,478	268	106
24. „ (West), ...	23,813	49	123	23,985	357	67
25. Whiteinch, ...	32,012	763	13	32,788	1,266	26
26. Hutchesontown, ...	38,647	14	—	38,661	389	99
27. Gorbals, ...	44,735	704	—	45,439	252	180
28. Kingston, ...	29,060	213	163	29,436	285	103
29. Kinning Park, ...	34,378	455	245	35,078	379	92
30. Govan, ...	35,274	357	—	35,631	529	67
31. Fairfield, ...	32,335	1,789	104	34,228	1,402	24
32. Pollokshields, ...	30,170	3,214	—	33,384	4,678	7
33. Camphill, ...	19,121	64	—	19,185	366	52
34. Pollokshaws, ...	24,236	—	—	24,236	1,847	13
35. Govanhill, ...	32,278	240	—	32,518	365	89
36. Langside, ...	17,651	855	—	18,506	557	33
37. Cathcart, ...	32,347	50	—	32,397	1,327	24
38. Yoker and Knightswood, ...	26,574	160	—	26,734	1,430	19
CITY, ...	1,069,226	32,652	1,479	1,103,357	30,046	37

TABLE II.—GLASGOW, 1933.—INHABITED AND UNOCCUPIED HOUSES
IN EACH MUNICIPAL WARD.

MUNICIPAL WARDS.	INHABITED HOUSES.*				Empty Houses.
	1933.	1932.	Decrease.	Increase.	
1. Shettleston and Tollcross,	9,597	9,591	—	6	19
2. Parkhead,	8,882	8,956	74	—	18
3. Dalrnarnock,	8,617	8,604	—	13	13
4. Calton,	6,525	6,723	198	—	36
5. Mile-end,	5,213	5,161	—	52	8
6. Whitevale,	5,345	5,375	30	—	34
7. Dennistoun,	6,918	6,920	2	—	55
8. Provan,	9,926	10,153	227	—	27
9. Cowlairs,	5,682	5,624	—	58	10
10. Springburn,	5,270	5,314	44	—	9
11. Townhead,	6,168	6,199	31	—	126
12. Exchange,	3,494	3,553	59	—	47
13. Blythswood,	2,439	2,498	59	—	81
14. Anderston,	5,994	5,995	1	—	87
15. Sandyford,	4,480	4,574	94	—	209
16. Park,	4,933	4,937	4	—	326
17. Cowcaddens,	8,380	8,420	40	—	46
18. Woodside,	8,153	8,159	6	—	94
19. Ruchill,	9,537	9,315	—	222	16
20. North Kelvin,	5,689	5,670	—	19	102
21. Maryhill,	6,363	6,208	—	155	20
22. Kelvinside,	6,554	6,212	—	342	185
23. Partick (East),	6,770	6,784	14	—	81
24. „ (West),	6,500	6,487	—	13	38
25. Whiteinch,	8,190	14,718	†	—	26
26. Hutchesontown,	9,639	9,627	—	12	35
27. Gorbals,	10,136	10,237	101	—	165
28. Kingston,	6,597	6,721	124	—	106
29. Kinning Park,	8,326	8,423	97	—	197
30. Govan,	7,915	7,962	47	—	98
31. Fairfield,	7,919	7,336	—	583	60
32. Pollokshields,	7,965	7,530	—	435	184
33. Camphill,	5,673	5,701	28	—	76
34. Pollokshaws,	6,292	6,003	—	289	14
35. Govanhill,	8,323	8,341	18	—	39
36. Langside,	4,900	4,818	—	82	80
37. Cathcart,	8,998	8,472	—	526	32
38. Yoker and Knightswood,	6,844	—	—	†	14
CITY,	265,146	263,321	—	1,825	2,813

* Includes Inhabitant Occupiers.

† Whiteinch now divided into two wards, 25 and 28.

TABLE III.—GLASGOW.—LININGS GRANTED BY DEAN OF GUILD COURT
IN YEARS FROM 1919 TO 1933, IN RESPECT OF HOUSES.

Year ending 31st August.	NUMBER OF APARTMENTS.						TOTAL.
	1.	2.	3.	4.	5.	6.	
1919, ...	—	—	144	78	—	—	222
1920, ...	—	12	1,239	414	214	57	1,936
1921, ...	—	—	1,176	981	240	34	2,431
1922, ...	—	—	65	99	39	31	234
1923, ...	—	680	286	205	104	46	1,321
1924, ...	—	357	991	605	745	82	2,780
1925, ...	—	504	674	111	44	61	1,394
1926, ...	—	318	4,649	967	769	93	6,796
1927, ...	—	228	2,889	1,209	802	55	5,183
1928, ...	—	132	4,184	2,238	314	17	6,885
1929, ...	—	570	1,656	1,024	124	82	3,456
1930, ...	—	506	1,958	1,295	230	202	4,191
1931, ...	—	122	2,220	1,900	38	26	4,306
1932, ...	33	529	3,464	1,251	70	4	5,351
1933, ...	—	270	1,845	3,162	337	23	5,637

TABLE IV.—ABSTRACT OF METEOROLOGICAL OBSERVATIONS TAKEN AT
SPRINGBURN PUBLIC PARK.

MONTHS.	TEMPERATURE.			RAINFALL.		SUNSHINE.
	Highest Temperature in Shade.	Lowest Temperature in Shade.	Mean Temperature.	No. of Days.	Amount Collected in inches.	Hours.
1933.						
January, ...	51	20	35.0	17	3.76	32.1
February, ...	52	26	38.8	18	3.07	82.5
March, ...	62	29	43.6	18	2.30	114.5
April, ...	62	31	47.6	16	2.26	91.6
May, ...	70	35	51.7	18	2.48	132.5
June, ...	85	45	60.0	13	1.83	205.7
July, ...	87	48	62.5	18	3.98	186.2
August, ...	84	48	60.2	22	3.08	158.6
September, ...	74	40	56.5	10	0.98	124.0
October, ...	66	31	48.1	21	2.82	78.1
November, ...	57	23	40.0	17	1.68	41.2
December, ...	48	22	37.2	15	0.93	7.5
1923, ...	83	20	46.4	260	44.64	1,036
1924, ...	74	18	46.1	256	39.72	973
1925, ...	83	18	46.7	222	38.24	1,224
1926, ...	86	22	47.7	242	45.91	1,174
1927, ...	77	20	46.8	245	49.12	1,162
1928, ...	79	20	46.8	255	49.35	1,121
1929, ...	80	14	46.3	226	43.01	1,223
1930, ...	79	20	47.7	234	42.94	1,022
1931, ...	73	19	46.5	251	43.06	1,078
1932, ...	83	25	47.3	223	42.98	1,126
1933, ...	87	20	48.4	203	29.17	1,255

The records for years previous to 1921 were taken at Glasgow Observatory.

TABLE V.—GLASGOW.—BIRTHS AND BIRTH-RATES *per Million* IN EACH WARD FOR THE YEAR 1933, AND NUMBER AND PERCENTAGE OF ILLEGITIMATE BIRTHS.

MUNICIPAL WARDS.	Births. 1933.	Birth-rate. 1933.	Birth-rate. 1932.	Illegitimate Births.	
				No.	% Total Births.
1. Shettleston and Tollcross, ...	832	20,246	23,682	37	4.4
2. Parkhead,	759	20,254	22,722	34	4.5
3. Dalmarnock,	950	26,550	27,951	59	6.2
4. Calton,	680	25,152	26,438	46	6.8
5. Mile-End,	643	30,056	29,339	41	6.4
6. Whitevale,	495	22,748	24,965	35	7.1
7. Dennistoun,	391	14,836	16,435	23	5.9
8. Provan,	944	23,097	25,249	49	5.2
9. Cowlairs,	418	19,634	21,843	19	4.5
10. Springburn,	446	19,783	22,361	33	7.4
11. Townhead,	552	21,784	23,732	46	8.3
12. Exchange,	329	23,739	26,695	39	11.8
13. Blythswood,	214	20,298	19,366	26	12.1
14. Anderston,	548	21,934	25,988	46	8.4
15. Sandyford,	392	20,738	20,428	34	8.7
16. Park,	196	10,077	8,892	24	12.2
17. Cowcaddens,	962	27,794	29,002	80	8.3
18. Woodside,	784	24,535	24,594	49	6.2
19. Ruchill,	851	20,394	22,194	42	4.9
20. North Kelvin,	398	18,856	20,740	21	5.3
21. Maryhill,	539	20,758	22,592	25	4.6
22. Kelvinside,	151	5,981	7,023	5	3.3
23. Partick (East),	457	16,737	17,662	37	8.1
24. „ (West),	454	19,065	20,503	19	4.2
25. Whiteinch,	437	13,651	17,271	12	2.7
26. Hutchesontown,	1,001	25,901	27,193	50	5.0
27. Gorbals,	1,138	25,439	26,580	87	7.6
28. Kingston,	701	24,122	27,204	56	8.0
29. Kinning Park,	852	24,783	24,887	49	5.7
30. Govan,	881	24,976	24,421	49	5.6
31. Fairfield,	575	17,782	18,339	28	4.9
32. Pollokshields,	274	9,082	8,701	10	3.6
33. Camphill,	186	9,727	10,517	8	4.3
34. Pollokshaws,	385	15,885	17,178	12	3.1
35. Govanhill,	498	15,428	16,270	28	5.6
36. Langside,	151	8,555	8,532	1	0.7
37. Cathcart,	388	11,995	11,335	7	1.8
38. Yoker and Knightswood, Institutions, &c.,	419 90	15,767 —	— —	11 15	2.6 —
CITY,	21,361	19,360	20,755	1,292	6.0

TABLE VI.—GLASGOW.—DEATHS AND DEATH-RATES *per Million* IN EACH MUNICIPAL WARD, FOR THE YEAR 1933, AND CORRESPONDING RATES FOR 1932 AND 1931.

MUNICIPAL WARDS.	Deaths. 1933.	Death-rates.		
		1933.	1932.	1931.
1. Shettleston and Tollcross, ...	508	12,362	14,131	12,800
2. Parkhead,	443	11,822	12,817	11,715
3. Dalmarnock,	520	14,532	16,020	16,592
4. Calton,	456	16,866	18,248	17,966
5. Mile-End,	302	14,117	18,189	16,267
6. Whitevale,	336	15,441	16,917	15,010
7. Dennistoun,	304	11,535	13,209	12,483
8. Provan,	484	11,842	13,307	15,025
9. Cowlairs,	278	13,058	11,681	14,044
10. Springburn,	264	11,710	13,425	11,476
11. Townhead,	381	15,035	16,345	16,638
12. Exchange,	249	17,967	18,175	19,235
13. Blythwood,	189	17,926	17,884	17,222
14. Anderston,	384	15,370	16,898	15,965
15. Sandyford,	304	16,083	17,110	16,006
16. Park,	300	15,423	15,779	15,026
17. Cowcaddens,	564	16,295	17,206	18,037
18. Woodside,	497	15,554	16,052	15,632
19. Ruchill,	431	10,329	12,865	12,265
20. North Kelvin,	282	13,360	14,176	13,156
21. Maryhill,	284	10,937	13,824	11,042
22. Kelvinside,	287	11,368	12,376	11,661
23. Partick (East),	417	15,272	14,737	14,577
24. „ (West),	284	11,926	13,051	13,769
25. Whiteinch,	385	12,027	10,589	10,442
26. Hutchesontown,	516	13,352	14,024	15,094
27. Gorbals,	687	15,357	16,746	17,285
28. Kingston,	373	12,835	16,154	14,971
29. Kinning Park,	488	14,195	14,990	12,838
30. Govan,	453	12,842	15,538	15,582
31. Fairfield,	392	12,123	11,791	13,111
32. Pollokshields,	344	11,402	12,981	10,510
33. Camphill,	255	13,336	13,328	12,148
34. Pollokshaws,	259	10,686	13,889	12,706
35. Govanhill,	403	12,485	11,506	11,590
36. Langside,	211	11,954	13,316	11,704
37. Cathcart,	349	10,789	11,039	9,992
38. Yoker and Knightswood, ...	205	7,714	—	—
39. Institutions,	666	—	—	—
40. Harbour,	13	—	—	—
CITY,	14,747	13,365	14,674	14,245

TABLE VII.—GLASGOW.—NUMBER OF OUTWARD AND INWARD TRANSFER DEATHS
FOR THE YEAR 1933.

CAUSE OF DEATH.		OUTWARD TRANSFERS.	INWARD TRANSFERS.
1.	Typhoid and Paratyphoid Fevers,	—	—
35A.	Typhus Fever,	—	—
35B.	Smallpox,	—	—
2.	Measles,	—	—
3.	Scarlet Fever,	6	1
4.	Whooping Cough,	4	1
5.	Diphtheria,	11	1
6.	Influenza,	8	—
7.	Encephalitis Lethargica,	—	1
8.	Cerebro-spinal Fever,	10	—
35C.	Erysipelas,	3	—
9.	Tuberculosis of Respiratory System,	48	49
10A.	Tuberculous Meningitis,	12	1
10B.	Abdominal Tuberculosis,	8	10
10C.	Other Tuberculous Diseases,	15	14
11.	Syphilis,	2	—
12.	General Paralysis of Insane (Tabes Dorsalis), ...	1	15
13.	Cancer, Malignant Disease,	322	34
35D.	Rheumatic Fever,	15	1
14.	Diabetes,	27	2
15.	Cerebral Hæmorrhage, &c.,	62	46
35E.	Meningitis (not Tuberculous),	9	3
35F.	Other Nervous Diseases,	51	35
16.	Heart Disease,	121	106
17.	Aneurysm,	8	—
18A.	Arterio-sclerosis,	25	20
18B.	Other Circulatory Diseases,	19	7
19.	Bronchitis,	15	18
20.	Pneumonia (all forms),	97	22
21.	Other Respiratory Diseases,	20	7
22.	Peptic Ulcer,	54	—
23.	Diarrhœa, &c. (under 2 years),	19	2
24.	Appendicitis,	59	3
25.	Cirrhosis of Liver,	6	—
26.	Other Diseases of Liver, &c.,	34	1
27.	Other Digestive Diseases,	121	5
28.	Acute and Chronic Nephritis,	57	6
29.	Puerperal Sepsis,	12	4
30.	Other Puerperal Causes,	17	—
31.	Congenital Debility, Premature Birth, Mal- formations, &c.,	66	7
32.	Senility,	13	15
33 and 34.	Suicide and other Deaths from Violence, ...	153	76
35.	Other Defined Causes,	285	17
36.	Causes Ill-Defined or Unknown,	10	9
ALL CAUSES,		1,825	539

TABLE VIII.—GLASGOW.—DEATHS AND DEATH-RATES *per Million* FROM DIFFERENT CAUSES, FOR THE YEAR 1933, AND CORRESPONDING RATES FOR 1932 AND 1931.

CAUSE OF DEATH.	DEATHS. 1933.	ANNUAL DEATH-RATE PER MILLION.		
		1933.	1932.	1931.
1. Typhoid and Paratyphoid Fevers, ...	9	8	8	10
5A. Typhus Fever,	—	—	—	1
5B. Smallpox,	—	—	—	—
2. Measles,	4	4	171	382
3. Scarlet Fever,	83	75	93	68
4. Whooping Cough,	227	206	117	426
5. Diphtheria,	89	81	109	109
6. Influenza,	244	221	415	190
7. Encephalitis Lethargica,	26	23	17	18
8. Cerebro-spinal Fever,	78	71	77	119
9C. Erysipelas,	63	57	55	51
9. Tuberculosis of Respiratory System,	909	824	889	865
10A. Tuberculous Meningitis,	106	96	134	153
10B. Abdominal Tuberculosis,	49	44	46	55
10C. Other Tuberculous Diseases,	117	106	89	110
11. Syphilis,	24	22	40	36
12. General Paralysis of Insane (Tabes Dorsalis),	61	55	54	65
13. Cancer, Malignant Disease,	1,537	1,394	1,366	1,393
14D. Rheumatic Fever,	61	55	70	52
15. Diabetes,	129	117	142	116
16. Cerebral Hæmorrhage, &c.,	1,026	930	937	929
17E. Meningitis (not Tuberculous),	51	46	56	55
18F. Other Nervous Diseases,	285	258	281	341
19. Heart Disease,	2,558	2,319	2,153	2,021
20. Aneurysm,	47	42	28	38
21A. Arterio-sclerosis,	499	452	416	370
21B. Other Circulatory Diseases,	104	94	83	88
22. Bronchitis,	508	460	547	455
23. Pneumonia (all forms),	1,346	1,220	1,750	1,408
24. Other Respiratory Diseases,	190	172	197	162
25. Peptic Ulcer,	105	95	102	107
26. Diarrhœa, &c. (under 2 years),	346	313	384	279
27. Appendicitis,	88	80	96	98
28. Cirrhosis of Liver,	35	32	46	32
29. Other Diseases of Liver, &c.,	72	65	69	62
30. Other Digestive Diseases,	329	298	306	313
31. Acute and Chronic Nephritis,	350	317	368	321
32. Puerperal Sepsis,	68	62	76	65
33. Other Puerperal Causes,	56	51	88	72
34. Congenital Debility, Premature Birth, Malformations, &c.,	804	729	761	840
35. Senility,	324	294	401	349
36. Suicide and Other Deaths from Vio- lence,	632	573	554	600
37. Other Defined Causes,	721	653	728	686
38. Causes Ill-Defined or Unknown,	387	351	355	335
ALL CAUSES,	14,747	13,365	14,674	14,245

TABLE IX.—GLASGOW, 1933.—DEATHS FROM

CAUSE OF DEATH.	MALES.														Total Males.
	-1	-2	-5	-10	-15	-20	-25	-35	-45	-55	-65	-75	75+		
1. Typhoid and Paratyphoid Fevers,	1	—	—	—	—	1	—	1	—	2	—	—	—	5	
35A. Typhus Fever,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
35B. Smallpox,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
2. Measles,	—	2	—	—	—	—	—	—	—	—	—	—	—	—	
3. Scarlet Fever,	3	6	16	8	3	1	1	1	—	1	—	—	—	40	
4. Whooping Cough,	55	38	9	1	—	—	—	—	—	—	—	1	—	104	
5. Diphtheria,	1	5	14	11	8	—	—	—	1	—	—	—	—	40	
6. Influenza,	9	5	1	1	1	4	1	6	9	8	27	23	17	112	
7. Encephalitis Lethargica, ...	—	—	—	—	—	2	1	2	6	5	1	1	—	18	
8. Cerebro-spinal Fever, ...	19	3	10	3	1	4	1	4	—	2	—	—	—	47	
35C. Erysipelas,	8	—	—	—	1	—	—	1	—	6	8	9	2	35	
9. Tuberculosis of Respiratory System,	2	1	5	7	8	52	57	116	110	98	65	16	2	539	
10A. Tuberculous Meningitis, ...	7	8	10	12	5	4	4	3	4	—	—	—	—	57	
10B. Abdominal Tuberculosis, ...	1	4	4	2	2	4	2	3	1	1	1	—	—	25	
10C. Other Tuberculous Diseases, ...	4	2	2	3	7	5	7	8	6	6	5	2	—	57	
11. Syphilis,	2	—	—	—	—	1	1	—	1	2	3	1	—	11	
12. General Paralysis of Insane (Tabes Dorsalis),	—	—	—	—	—	—	—	2	12	17	12	5	1	49	
13. Cancer, Malignant Disease, ...	1	—	2	1	2	3	6	10	37	120	245	259	89	775	
35D. Rheumatic Fever,	—	—	1	1	5	2	1	3	1	5	5	2	—	26	
14. Diabetes,	—	—	—	—	—	2	—	6	5	3	12	9	3	40	
15. Cerebral Hæmorrhage, &c., ...	—	—	—	2	2	—	1	8	7	35	109	179	121	464	
35E. Meningitis (not Tuberculous), ...	11	3	2	4	—	1	2	3	1	2	—	—	—	29	
35F. Other Nervous Diseases, ...	41	1	4	4	7	5	5	14	9	17	18	25	6	156	
16. Heart Disease,	2	1	—	2	8	12	11	30	54	152	298	430	274	1,274	
17. Aneurysm,	—	—	—	—	—	—	—	3	2	13	17	5	1	41	
18A. Arterio Sclerosis,	—	—	—	—	—	—	—	1	3	12	54	113	98	281	
18B. Other Circulatory Diseases, ...	2	—	—	—	1	1	1	—	2	3	15	21	8	54	
19. Bronchitis,	24	5	1	—	—	2	2	2	16	36	40	77	59	264	
20. Pneumonia (all forms), ...	264	85	38	10	8	16	19	40	67	103	104	62	35	851	
21. Other Respiratory Diseases, ...	12	1	2	3	—	1	1	4	11	12	16	15	12	90	
22. Peptic Ulcer,	—	—	—	—	—	1	1	7	10	18	23	12	5	77	
23. Diarrhoea, &c. (under 2 years),	181	19	—	—	—	—	—	—	—	—	—	—	—	200	
24. Appendicitis,	—	1	—	12	9	3	5	4	7	3	4	5	—	53	
25. Cirrhosis of Liver,	—	—	—	—	—	1	—	—	2	4	10	7	—	24	
26. Other Diseases of Liver, &c., ...	1	—	—	—	—	—	—	—	—	—	6	8	7	22	
27. Other Digestive Diseases, ...	18	4	8	6	4	2	2	4	11	16	31	25	14	145	
28. Acute and Chronic Nephritis, ...	—	1	1	4	5	2	—	11	12	31	55	28	19	169	
29. Puerperal Sepsis,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
30. Other Puerperal Causes, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
31. Congenital Debility, Premature Birth, Malformations, &c.,	466	—	3	—	—	—	—	—	—	—	—	—	—	469	
32. Senility,	—	—	—	—	—	—	—	—	—	—	1	24	98	123	
33. Suicide and other Deaths from	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
34. Violence,	21	14	27	31	15	30	24	50	45	54	70	39	11	431	
35. Other Defined Causes,	43	9	11	14	7	12	6	17	26	48	69	75	48	385	
36. Causes Ill-Defined or Unknown,	17	2	1	4	1	1	4	3	18	33	58	76	25	243	
ALL CAUSES,	1,216	220	172	146	110	175	166	367	496	863	1,382	1,554	955	7,827	

DIFFERENT CAUSES IN SEXES AND AT SEVERAL AGE-PERIODS.

CAUSE OF DEATH.	FEMALES.														Total Females	Total Both Sexes.
	-1	-2	-5	-10	-15	-20	-25	-35	-45	-55	-65	-75	75+			
Typhoid and Paratyphoid Fevers,	1	—	—	—	—	—	—	2	1	—	—	—	—	4	9	
A. Typhus Fever,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
B. Smallpox,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Measles,	2	—	—	—	—	—	—	—	—	—	—	—	—	2	4	
Scarlet Fever,	—	9	10	10	8	2	1	1	1	1	—	—	—	43	83	
Whooping-cough,	62	41	20	—	—	—	—	—	—	—	—	—	—	123	227	
Diphtheria,	—	4	21	15	6	1	1	—	—	—	1	—	—	49	89	
Influenza,	3	1	1	—	—	4	1	10	11	11	23	30	37	132	244	
Encephalitis Lethargica, ...	—	—	—	—	—	—	—	2	1	3	2	—	—	8	26	
Cerebro-spinal Fever, ...	9	1	6	4	3	2	2	1	2	1	—	—	—	31	78	
C. Erysipelas,	5	1	—	—	—	—	1	—	2	6	7	5	1	28	63	
Tuberculosis of Respiratory System,	5	—	2	3	14	61	77	98	55	26	19	7	3	370	909	
A. Tuberculous Meningitis, ...	5	9	6	12	7	5	3	2	—	—	—	—	—	49	106	
B. Abdominal Tuberculosis, ...	—	2	3	2	—	3	4	4	1	2	3	—	—	24	49	
C. Other Tuberculous Diseases, ...	4	4	4	3	2	10	10	7	3	2	4	4	3	60	117	
Syphilis,	3	—	—	—	—	—	—	1	—	4	2	1	2	13	24	
General Paralysis of Insane (Tabes Dorsalis), ...	—	—	—	—	—	1	—	2	3	5	—	1	—	12	61	
Cancer, Malignant Disease, ...	—	1	—	—	—	2	2	14	68	134	201	242	98	762	1,537	
D. Rheumatic Fever,	—	—	—	3	6	1	4	4	11	3	—	3	—	35	61	
Diabetes,	—	—	—	—	—	1	—	3	4	14	28	27	12	89	129	
E. Cerebral Hæmorrhage, &c., ...	1	—	1	—	1	1	—	2	7	39	117	203	190	562	1,026	
F. Meningitis (not Tuberculous), ...	6	5	1	4	2	1	1	—	—	—	1	1	—	22	51	
G. Other Nervous Diseases, ...	25	3	2	2	2	1	5	13	16	19	21	15	5	129	285	
H. Heart Disease,	1	1	4	4	15	13	9	41	75	116	264	356	385	1,284	2,558	
I. Aneurysm,	—	—	—	—	—	—	—	—	—	1	4	—	1	6	47	
J. Arterio Sclerosis,	—	—	—	—	—	—	—	—	2	9	31	72	104	218	499	
K. Other Circulatory Diseases, ...	2	—	—	—	—	—	—	1	—	6	14	10	17	50	104	
L. Bronchitis,	26	4	3	—	—	—	2	4	7	11	24	67	96	244	508	
M. Pneumonia (all forms), ...	157	57	26	13	6	2	6	24	27	33	44	60	40	495	1,346	
N. Other Respiratory Diseases, ...	6	2	1	1	1	1	2	4	4	12	9	25	32	100	190	
O. Peptic Ulcer,	—	—	—	—	—	—	—	3	3	8	5	6	3	28	105	
P. Diarrhœa, &c. (under 2 years), ...	129	17	—	—	—	—	—	—	—	—	—	—	—	146	346	
Q. Appendicitis,	—	—	2	1	10	2	2	4	2	3	3	5	1	35	88	
R. Cirrhosis of Liver,	—	—	—	—	—	—	—	1	2	1	4	1	2	11	35	
S. Other Diseases of Liver, &c., ...	1	—	1	—	—	—	1	1	2	7	16	16	5	50	72	
T. Other Digestive Diseases, ...	11	3	11	12	—	2	4	5	11	25	29	42	29	184	329	
U. Acute and Chronic Nephritis, ...	—	2	—	1	1	4	4	10	21	38	42	40	18	181	350	
V. Puerperal Sepsis,	—	—	—	—	—	2	15	36	14	1	—	—	—	68	68	
W. Other Puerperal Causes, ...	—	—	—	—	—	—	9	30	17	—	—	—	—	56	56	
X. Congenital Debility, Premature Birth, Malformations, &c., ...	331	2	1	1	—	—	—	—	—	—	—	—	—	335	804	
Y. Senility,	—	—	—	—	—	—	—	—	—	—	1	42	158	201	324	
Z. Suicide and other Deaths from Violence,	19	5	10	18	3	8	11	16	17	12	19	31	32	201	632	
AA. Other Defined Causes, ...	22	14	8	7	8	6	8	31	29	49	58	57	39	336	721	
AB. Causes Ill-Defined or Unknown, ...	9	—	—	2	—	—	2	5	11	16	37	28	34	144	387	
ALL CAUSES,	845	188	144	118	95	136	187	382	430	618	1,033	1,397	1,347	6,920	14,747	

TABLE X.—GLASGOW, 1933.—DEATHS OCCURRING IN INSTITUTIONS FOR THE TREATMENT OF THE SICK, NURSING HOMES, &c.

CAUSE OF DEATH.	Local Authority General Hospitals and Workhouses.	Local Authority Fever Hospitals and Sanatoria.	Local Authority Mental Hospitals.	Voluntary Hospitals and Infirmarys.	Nursing Homes, &c.	Totals.	% of all Deaths.	Outward Transfer Deaths.
1. Typhoid and Paratyphoid Fevers,	—	8	—	1	—	9	100-0	—
35A. Typhus Fever,	—	—	—	—	—	—	—	—
35B. Smallpox,	—	—	—	—	—	—	—	—
2. Measles,	2	1	—	—	—	3	75-0	—
3. Scarlet Fever,	—	67	—	1	—	68	81-9	6
4. Whooping Cough,	4	144	—	—	—	148	65-2	4
5. Diphtheria,	1	82	—	—	—	83	93-3	11
6. Influenza,	18	11	2	12	1	44	18-0	6
7. Encephalitis Lethargica,	14	1	—	1	—	16	61-5	—
8. Cerebro-spinal Fever,	1	72	—	3	—	76	97-4	10
35C. Erysipelas,	—	54	—	—	—	54	85-7	3
9. Tuberculosis of Respiratory System,	154	328	21	33	2	538	59-2	47
10A. Tuberculous Meningitis,	18	50	—	18	—	86	81-1	12
10B. Abdominal Tuberculosis,	5	17	—	12	2	36	73-5	8
10C. Other Tuberculous Diseases,	20	45	2	21	—	88	75-2	15
11. Syphilis,	11	2	—	3	—	16	66-7	2
12. General Paralysis of Insane (Tabes Dorsalis),	31	—	18	2	4	55	90-2	1
13. Cancer, Malignant Disease,	353	9	11	295	32	700	45-5	312
35D. Rheumatic Fever,	15	1	—	21	—	37	60-7	15
14. Diabetes,	21	—	—	41	2	64	49-6	27
15. Cerebral Hæmorrhage, &c.,	307	4	10	86	21	428	41-7	58
35E. Meningitis (not Tuberculous),	10	8	3	9	2	32	62-7	9
35F. Other Nervous Diseases,	65	—	35	45	4	149	52-3	50
16. Heart Disease,	797	22	60	173	25	1,077	42-1	107
17. Aneurysm,	11	—	—	15	1	27	57-4	8
18A. Arterio-sclerosis,	132	—	14	15	15	176	35-3	23
18B. Other Circulatory Diseases,	29	1	1	20	3	54	51-9	15
19. Bronchitis,	108	7	7	29	4	155	30-5	11
20. Pneumonia (all forms),	311	460	12	133	10	926	68-8	92
21. Other Respiratory Diseases,	40	5	5	21	6	77	40-5	18
22. Peptic Ulcer,	12	1	1	74	4	92	87-6	53
23. Diarrhoea, &c. (under 2 years),	144	12	—	91	—	247	71-4	19
24. Appendicitis,	7	—	—	70	6	83	94-3	59
25. Cirrhosis of Liver,	10	—	—	8	—	18	51-4	6
26. Other Diseases of Liver, &c.,	6	1	—	29	9	45	62-5	33
27. Other Digestive Diseases,	58	17	2	128	10	215	65-3	119
28. Acute and Chronic Nephritis,	85	5	2	75	8	175	50-0	54
29. Puerperal Sepsis,	7	46	—	10	2	65	95-6	12
30. Other Puerperal Causes,	12	—	—	36	1	49	87-5	17
31. Congenital Debility, Premature Birth, Malformations, &c.,	190	13	—	201	10	414	51-5	64
32. Senility,	36	—	11	7	2	56	17-3	12
33. Suicide and other Deaths from								
34. } Violence,	46	3	1	252	5	307	48-6	139
35. } Other Defined Causes,	151	41	9	270	22	493	68-4	283
36. } Causes Ill-defined or Unknown,	8	—	—	10	2	20	5-2	4
YEAR, 1933,	3,250	1,538	227	2,271	215	7,501	50-9	1,744
YEAR, 1932,	3,310	1,753	254	2,448	227	7,992	49-7	1,701

TABLE XI.—GLASGOW, 1933.—DEATHS OF PERSONS WITH INSTITUTIONAL OR HARBOUR ADDRESS ONLY WITHIN THE CITY, ARRANGED ACCORDING TO USUAL RESIDENCE AS REGISTERED. (OUTWARD TRANSFERS EXCLUDED.)

CAUSE OF DEATH.	Staff with Acquired Institutional Residence.	OTHER THAN STAFF.						TOTAL.
		Corporation General and Mental Hospitals and Workhouses.	Model Lodging Houses.	Other Institutions.	Harbour.	Residence out- with Glasgow but not transferable.	Residence out- with Scotland and not transferable.	
1. Typhoid and Paratyphoid Fevers,	—	—	1	—	1	—	—	2
15A. Typhus Fever,	—	—	—	—	—	—	—	—
15B. Smallpox,	—	—	—	—	—	—	—	—
2. Measles,	—	—	—	—	—	—	—	—
3. Scarlet Fever,	1	—	—	1	—	—	—	2
4. Whooping-cough,	—	—	—	—	—	—	—	—
5. Diphtheria,	—	—	—	—	—	1	—	1
6. Influenza,	1	—	1	1	—	1	—	4
7. Encephalitis Lethargica,	—	1	—	—	—	—	—	1
8. Cerebro Spinal Fever,	—	—	—	—	—	2	—	2
15C. Erysipelas,	—	—	1	1	—	—	—	2
9. Tuberculosis of Respiratory System,	4	9	31	2	—	1	—	47
0A. Tuberculous Meningitis,	—	1	—	—	—	—	—	1
0B. Abdominal Tuberculosis,	—	—	—	—	—	—	—	—
0C. Other Tuberculous Diseases,	1	—	1	—	—	—	—	2
1. Syphilis,	—	1	1	—	—	—	—	2
2. General Paralysis of Insane (Tabes Dorsalis),	—	—	2	4	—	—	—	6
3. Cancer, Malignant Disease,	—	10	49	5	—	—	8	72
15D. Rheumatic Fever,	—	—	1	—	—	—	—	1
4. Diabetes,	—	—	1	—	—	—	—	1
5. Cerebral Hæmorrhage, &c.,	—	8	41	12	—	—	—	61
15E. Meningitis (not Tuberculous),	—	—	—	—	—	—	—	—
15F. Other Nervous Diseases,	1	4	5	—	—	—	—	10
6. Heart Disease,	1	54	124	16	—	—	3	198
7. Aneurysm,	—	—	3	—	—	—	1	4
8A. Arterio-sclerosis,	—	1	12	9	—	—	1	23
8B. Other Circulatory Diseases,	—	2	2	—	—	—	—	4
9. Bronchitis,	—	6	18	3	—	—	—	27
10. Pneumonia (all forms),	—	4	30	7	2	—	3	46
11. Other Respiratory Diseases,	—	2	8	4	2	—	—	16
12. Peptic Ulcer,	1	—	3	—	—	—	1	5
13. Diarrhoea, &c. (under 2 years),	—	—	—	—	—	—	—	—
14. Appendicitis,	—	—	—	—	—	—	—	—
15. Cirrhosis of Liver,	—	—	—	—	—	—	—	—
16. Other Diseases of Liver, &c.,	—	—	—	2	—	—	1	3
17. Other Digestive Diseases,	—	1	6	1	—	—	—	8
18. Acute and Chronic Nephritis,	—	3	8	1	—	—	1	13
19. Puerperal Sepsis,	—	—	—	1	—	—	—	1
20. Other Puerperal Causes,	—	—	—	—	—	—	—	—
1. Congenital Debility, Premature Birth, Malformations, &c.,	—	1	1	—	—	—	4	6
2. Senility,	—	3	12	10	—	—	—	25
3. Suicide and other Deaths from								
4. } Violence,	1	2	26	3	5	—	5	42
5. } Other Defined Causes,	2	3	7	1	—	—	2	15
6. Causes Ill-Defined or Unknown,	—	1	23	2	—	—	—	26
ALL CAUSES,	13	117	418	86	10	5	30	679

TABLE XII.—GLASGOW.—DEATHS UNDER 1 YEAR AND DEATH-RATES PER 1,000 BIRTHS IN EACH MUNICIPAL WARD, FOR THE YEAR 1933.

MUNICIPAL WARDS.	Deaths —1 Year.	Death Rate per 1,000 Births.		
	1933.	1933.	1932.	1931.
1. Shettleston and Tollcross,	76	91	107	90
2. Parkhead,	68	89	127	83
3. Dalmarnock,	104	109	120	127
4. Calton,	89	131	140	140
5. Mile-end,	76	118	145	117
6. Whitevale,	63	127	167	100
7. Dennistoun,	31	79	95	82
8. Provan,	83	88	98	124
9. Cowlairs,	34	81	76	90
10. Springburn,	39	87	104	93
11. Townhead,	67	121	129	129
12. Exchange,	41	125	136	150
13. Blythswood,	24	112	163	119
14. Anderston,	65	119	129	126
15. Sandyford,	44	112	135	111
16. Park,	14	71	81	71
17. Cowcaddens,	106	110	126	119
18. Woodside,	83	106	135	114
19. Ruchill,	61	72	11	109
20. North Kelvin,	46	115	96	97
21. Maryhill,	44	82	101	78
22. Kelvinside,	5	33	24	34
23. Partick (East),	51	111	99	77
24. „ (West),	44	97	97	92
25. Whiteinch,	29	66	66	61
26. Hutchesontown,	113	113	100	118
27. Gorbals,	115	109	127	127
28. Kingston,	59	84	132	105
29. Kinning Park,	96	106	110	102
30. Govan.	95	108	134	127
31. Fairfield,	52	90	87	93
32. Pollokshields,	10	36	44	34
33. Camphill,	10	54	45	90
34. Pollokshaws,	22	57	81	68
35. Govanhill,	46	92	87	77
36. Langside,	4	26	27	67
37. Cathcart,	19	49	75	46
38. Yoker and Knightswood, Institutions,	23	55	—	—
Harbour,	10	—	—	—
CITY,	2,061	96	112	105

TABLE XIII.—GLASGOW, 1933.—MALE INFANT DEATHS AT GIVEN AGES AND FROM SEVERAL CAUSES.

CAUSE OF DEATH.	AGE IN WEEKS.				Total -4 weeks.	AGE IN MONTHS.											Total -1 year.
	-1	-2	-3	-4		-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	
I. CONGENITAL MALFORMATIONS, ...	15	7	3	4	29	8	5	1	1	1	1	1	1	—	1	49	
II. DISEASES OF EARLY INFANCY, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	417	
(a) Congenital Debility, Sclerema, and Icterus, ...	49	7	9	6	71	13	6	6	7	2	2	1	2	—	—	111	
(b) Premature Birth, ...	187	24	14	7	232	10	3	1	—	—	—	—	—	—	—	246	
(c) Injury at Birth, ...	26	5	—	—	31	1	1	1	—	—	—	—	—	—	—	34	
(d) Atelectasis, ...	9	3	1	—	13	2	1	—	—	—	—	—	—	—	—	16	
(e) Others, ...	5	2	1	2	10	—	—	—	—	—	—	—	—	—	—	10	
III. DISEASES OF RESPIRATORY SYSTEM, ...	3	6	12	4	25	15	27	19	30	24	31	22	29	27	25	300	
IV. DISEASES OF DIGESTIVE SYSTEM, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	200	
(a) Diarrhoeal, ...	1	—	4	4	9	21	25	32	28	19	13	9	6	11	3	5	
(b) Others, ...	2	—	—	—	2	2	2	3	2	1	1	1	1	2	2	19	
V. DISEASES OF NERVOUS SYSTEM, ...	8	3	—	—	15	10	8	3	4	3	3	3	—	1	1	52	
VI. TUBERCULOUS DISEASES, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14	
(a) Pulmonary Tuberculosis, ...	—	—	—	—	—	—	—	2	—	1	2	—	1	—	—	2	
(b) Tuberculous Meningitis, ...	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	7	
(c) Abdominal Tuberculosis, ...	—	—	—	—	—	—	—	—	—	—	—	1	—	1	1	1	
(d) Other Forms, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	
VII. INFECTIOUS DISEASES, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	89	
(a) Measles, ...	—	—	—	—	—	—	—	—	—	1	—	—	2	—	—	3	
(b) Scarlet Fever, ...	—	—	—	—	1	2	—	3	5	4	6	8	7	3	9	55	
(c) Whooping-cough, ...	—	—	1	—	—	—	—	—	—	—	—	—	—	1	1	1	
(d) Diphtheria, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	8	
(e) Erysipelas, ...	—	—	—	2	2	2	2	—	2	2	4	1	4	2	1	19	
(f) Cerebro-spinal Fever, ...	—	—	—	—	—	—	—	—	—	—	—	1	1	1	1	2	
(g) Varicella, ...	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	1	
(h) Typhoid and Paratyphoid Fevers, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	2	
VIII. SYPHILIS, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	
IX. OVERLAYING, ...	1	1	1	—	3	3	2	—	1	1	—	—	—	—	—	10	
X. OTHER VIOLENCE, ...	5	—	—	—	5	1	—	—	—	1	1	—	—	—	—	11	
XI. ALL OTHER CAUSES, ...	8	3	2	4	17	4	7	6	2	10	6	5	5	3	4	3	
TOTALS, ...	319	61	48	37	465	95	91	78	82	69	69	55	58	57	49	48	
																1,216	

TABLE XIV.—GLASGOW, 1933.—FEMALE INFANT DEATHS AT GIVEN AGES AND FROM SEVERAL CAUSES.

CAUSE OF DEATH.	AGE IN WEEKS.				Total -4 weeks.	AGE IN MONTHS.										Total -1 year.		
	-1	-2	-3	-4		-2	-3	-4	-5	-6	-7	-8	-9	-10	-11		-12	
I. CONGENITAL MALFORMATIONS, ...	10	4	3	3	20	3	2	2	1	—	2	1	—	—	—	—	—	31
II. DISEASES OF EARLY INFANCY, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	300
(a) Congenital Debility, Sclerema, and Icterus, ...	28	12	5	4	49	8	3	1	2	1	—	—	—	—	—	—	64	
(b) Premature Birth, ...	146	17	9	11	183	8	3	—	—	—	—	—	—	—	—	—	194	
(c) Injury at Birth, ...	12	2	—	—	14	—	—	—	—	—	—	—	—	—	—	—	14	
(d) Atelectasis, ...	12	—	3	1	16	1	1	—	—	—	—	—	—	—	—	—	18	
(e) Others, ...	4	2	—	1	7	2	—	—	—	1	—	—	—	—	—	—	10	
III. DISEASES OF RESPIRATORY SYSTEM, ...	5	4	4	3	16	17	7	24	18	23	15	14	15	14	12	12	189	
IV. DISEASES OF DIGESTIVE SYSTEM, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	141	
(a) Diarrheal, ...	—	—	3	3	10	11	20	16	16	13	9	11	10	7	3	3	129	
(b) Others, ...	4	1	—	1	6	2	4	3	4	2	1	3	1	3	1	2	32	
V. DISEASES OF NERVOUS SYSTEM, ...	—	—	—	—	—	—	—	—	1	—	1	1	1	1	—	—	14	
VI. TUBERCULOUS DISEASES, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5	
(a) Pulmonary Tuberculosis, ...	—	—	—	—	—	—	—	2	—	—	—	1	1	1	—	—	4	
(b) Tuberculous Meningitis, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	84	
(c) Abdominal Tuberculosis, ...	—	—	—	—	—	—	—	—	—	1	—	1	1	—	—	—	2	
(d) Other Forms, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5	
VII. INFECTIOUS DISEASES, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
(a) Measles, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
(b) Scarlet Fever, ...	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1	—	84	
(c) Whooping-cough, ...	—	—	—	—	—	—	5	3	4	4	3	4	9	10	12	4	62	
(d) Diphtheria, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
(e) Erysipelas, ...	—	—	—	—	—	—	—	1	1	1	1	2	1	2	—	1	5	
(f) Cerebro-spinal Fever, ...	—	—	—	—	—	—	1	—	—	1	2	2	1	1	—	—	9	
(g) Varicella, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6	
(h) Typhoid and Paratyphoid Fevers, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	
VIII. SYPHILIS, ...	1	—	—	—	1	1	1	—	—	—	—	—	—	—	—	—	3	
IX. OVERLAYING, ...	1	1	—	3	5	2	2	2	—	—	—	—	—	—	—	—	9	
X. OTHER VIOLENCE, ...	4	—	—	—	4	1	1	2	2	—	—	—	—	—	—	—	10	
XI. ALL OTHER CAUSES, ...	—	2	—	—	2	3	3	4	7	3	2	2	—	1	2	4	32	
TOTALS, ...	227	48	28	30	333	65	50	63	57	51	37	41	41	42	34	31	845	

TABLE XV.—GLASGOW, 1931-1933.—ABSTRACT OF NOTIFICATIONS UNDER NOTIFICATION OF BIRTHS ACT, 1907, AND RESULTS OF VISITS.

	1933.	1932.	1931.
Total Number of Notifications,	22,480	23,711	23,995
Doctor at Home,	5,123	5,554	6,001
Doctor in Institution,	5,946	5,629	4,925
Maternity Hospital (Outdoor) Nurse,	4,465	4,656	4,234
Other Institutional Nurse,	—	10	4
Certified Midwife,	6,923	7,842	8,814
Others,	23	20	17
Total Cards issued,	17,357	18,157	17,994
Total Cards returned,	17,524	18,148	18,007
Full Information,	16,894	17,455	17,273
Doctor found in Attendance,	7	9	6
Wrong Address—Not Traced,	—	—	—
Others,	623	684	728

TABLE XVI.—GLASGOW, 1931-1933.—BIRTHS NOTIFIED SHOWING MEDICALLY AND NOT MEDICALLY ATTENDED.

	1933.	1932.	1931.
Notifications Received— <i>less Duplicates</i> —			
Total,	22,480	23,711	23,995
Live-births,	21,583	22,726	22,992
Still-births,	897	985	1,003
Per cent. Still-births to Total,	4.0	4.2	4.2
Medically attended—			
Births at Home,	5,123	5,554	6,001
In Institutions,	5,946	5,629	4,925
Total,	11,069	11,183	10,926
Per cent.,	49.2	47.2	45.5
Still-births at Home,	192	193	211
Still-births in Institutions,	451	452	414
Not Medically attended—			
Maternity Hospital, Outdoor Nurse,	4,465	4,656	4,234
Other Institutional Nurses,	—	10	4
Certified Midwives,	6,923	7,842	8,814
Others,	23	20	17
Total,	11,411	12,528	13,069
Per cent.,	50.8	52.8	54.5
Still-births,	254	340	378

TABLE XVII.—GLASGOW, 1932 AND 1933.—CASES OF INFECTIOUS DISEASE REGISTERED AND NUMBERS OF THESE TREATED IN FEVER HOSPITALS, &c.†

	1933.				1932.			
	Fever Hosp.	Other Institutions.	Home.	Total.	Fever Hosp.	Other Institutions.	Home.	Total.
A.—Notifiable—								
Typhus Fever, ...	—	—	—	—	—	—	—	—
Enteric Fever, ...	27	1	—	28	47	2	—	49
Paratyphoid B, ...	104	—	3	107	24	—	3	27
Continued and Undefined Fever, ...	2	—	—	2	—	—	1	1
Puerperal Fever, ...	339	159	45	543	419	233	58	710
Puerperal Pyrexia, ...	74	185	132	391	71	143	102	316
Smallpox, ...	—	—	—	—	—	—	—	—
Scarlet Fever, ...	6,543	—	1,835	8,378	7,153	2	2,003	9,158
Diphtheria and Membranous Croup, ...	2,323	2	45	2,370	2,088	1	64	2,153
Erysipelas, ...	663	10	444	1,117	538	15	492	1,045
Cholera, ...	—	—	—	—	—	—	—	—
Cerebro-spinal Fever, ...	148	3	3	154	132	12	7	151
Ophthalmia Neonatorum, ...	55	50	785	890	62	—	951	1,013
Trachoma, ...	—	6	14	20	—	6	18	24
Acute Encephalitis Lethargica, ...	2	5	6	13	4	—	7	11
Acute Polio-Encephalitis, ...	3	3	—	6	—	—	—	—
Acute Poliomyelitis, ...	18	11	5	34	—	2	2	4
Acute Primary Pneumonia, ...	2,510	694	1,642	4,846	3,003	743	3,144	6,890
Acute Influenza-Pneumonia, ...	159	18	171	348	236	52	377	665
Malaria, ...	10	2	7	19	1	1	10	12
Dysentery, ...	50	—	21	71	95	7	34	136
Infective Jaundice, ...	1	—	—	1	—	—	—	—
Anthrax, ...	—	—	—	—	—	—	—	—
Pulmonary Tuberculosis, ...	1,029	—	587	1,616	1,127	—	595	1,722
Other Forms of Tuberculosis, ...	374	—	420	794	448	—	509	957
B.—Not Notifiable—								
Measles, ...	19	3	922	944	681	32	4,866	5,579
German Measles, ...	114	—	1,717	1,831	76	7	598	681
Whooping-cough, ...	557	4	5,880	6,441	337	13	4,316	4,666
Chickenpox,* ...	250	—	6,567	6,817	179	5	6,954	7,138
Mumps, ...	14	—	—	14	17	—	1	18
Totals, ...	15,388	1,156	21,251	37,795	16,738	1,276	25,112	43,126
Notified, but diagnosis altered to Non-Infectious Diseases, ...	1,176	2	14	1,192	1,362	2	8	1,372
Total Registered, ...	16,564	1,158	21,265	38,987	18,100	1,278	25,120	44,498

† Where patients suffer from two or more diseases, each disease is reckoned as a case.

* Compulsorily notifiable March, 1927 to December, 1932.

TABLE XVIII.—GLASGOW, 1929-1933.—CASE-RATES *per Million*
FOR INFECTIOUS DISEASES.

	CASE RATES PER MILLION.				
	1933.	1932.	1931.	1930.	1929.
A.—Notifiable—					
Typhus Fever,	—	—	1	2	—
Enteric Fever and Paratyphoid B, ...	122	69	102	129	78
Continued and Undefined Fever, ...	2	1	3	4	5
Puerperal Fever,	492	648	609	549	474
Puerperal Pyrexia,	354	289	209	216	45
Smallpox,	—	—	—	3	20
Scarlet Fever,	7,593	8,361	6,449	4,555	3,079
Diphtheria and Membranous Croup, ...	2,148	1,966	1,937	2,407	1,945
Erysipelas,	1,012	954	1,008	1,156	1,008
Cholera,	—	—	—	—	—
Cerebro-spinal Fever,	140	138	167	136	186
Ophthalmia Neonatorum,	807	925	740	755	588
Trachoma,	18	22	29	23	41
Acute Encephalitis Lethargica,	12	10	9	29	30
Acute Polio-Encephalitis,	5	—	—	3	1
Acute Poliomyelitis,	31	4	4	21	24
Acute Primary Pneumonia,	4,392	6,291	4,734	5,895	6,469
Acute Influenzal-Pneumonia,	315	607	328	319	1,082
Malaria,	17	11	12	20	29
Dysentery,	64	124	73	68	109
Infective Jaundice,	1	—	—	5	—
Pulmonary Tuberculosis,	1,465	1,572	1,564	1,549	1,656
Other Forms of Tuberculosis,	720	874	897	962	911
B.—Not Notifiable—					
Measles,	856	5,094	14,123	11,393	5,938
German Measles,	1,659	622	106	154	1,339
Whooping-cough,	5,838	4,260	8,470	5,315	4,686
Chickenpox,	6,178	6,517	7,092	6,617	7,440
Others,	13	16	5	13	9
Totals,	34,254	39,375	48,671	42,298	37,192

TABLE XIX.—

CASES OF INFECTIOUS DISEASE REGISTERED IN EACH MONTH—SHOWING NUMBERS

	Typhus Fever.		Enteric, including Paratyphoid Fever.		Continued and Undefined Fever.		Puerperal Fever.		Puerperal Pyrexia.		Smallpox.		Scarlet Fever.		Diphtheria and Membranous Croup.		Erysipelas.		Cerebro-spinal Fever.		Ophthalmia Neonatorum.		Trachoma.		Acute Encephalitis Lethargica.		Acute Polio-Encephalitis.		Acute Poliomyelitis.		
	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	
Jan.,	1	...	...	...	22	15	...	30	...	...	518	159	176	3	61	46	23	1	4	108	...	1	1	1	1	...	...	...
Feb.,	1	...	...	...	32	28	6	31	...	...	373	109	145	4	34	31	12	...	5	101	...	1	...	2	...	...	...	...
March,	3	...	...	...	42	13	4	30	...	...	471	115	182	2	44	47	23	1	3	85	...	3	...	...	...	...	1	...	
April,	9	...	...	...	24	15	7	30	...	...	419	78	150	4	52	20	14	1	9	79	...	1	...	1	...	1	...	...
May,	14	1	...	...	31	20	6	36	...	...	606	119	175	2	45	41	19	1	8	82	...	2	...	...	...	1	...	...
June,	17	1	...	...	26	17	6	30	...	...	430	78	148	3	41	32	7	1	6	76	...	2	...	...	1	2	1	...	
July,	13	...	...	...	27	16	9	26	...	...	369	54	146	1	30	16	11	1	5	54	...	...	1	3	1	...	8	...	
August,	34	2	...	...	28	13	10	26	...	...	477	38	157	7	41	23	9	...	1	53	...	...	...	...	1	2	7	...	
Sept.,	11	19	22	6	21	635	146	247	3	58	38	7	...	1	46	...	4	1	2	6	...
October,	18	19	9	3	15	847	273	276	4	79	52	4	...	4	52	...	2	1	1	...
Nov.,	8	...	2	...	40	15	9	20	761	399	284	10	105	68	9	...	3	46	...	4	...	4	...	1
Dec.,	2	29	21	8	22	637	267	237	4	73	40	10	...	6	53	1	...
	131	4	2	...	339	204	74	317	6543	1835	2323	47	663	454	148	6	55	835	...	20	2	11	3	3	18	16	...

TABLE XX.—HOSPITAL BED ACCOMMODATION FOR INFECTIOUS DISEASES IN GLASGOW SINCE 1865 (EXCLUDING TUBERCULOSIS).

YEAR.	PARISH.			Glasgow Royal Infirmary.	LOCAL AUTHORITY.						Total Beds.	Population in Thousands.	Beds per Thousand.
	City.	Barony.	Govan.		Parliamentary Road.	Belvidere Fever.	Belvidere Smallpox.	Ruchill.	Shieldhall.	Knightswood.			
1865	100	120	54	200	136	—	—	—	—	—	610	428	1.4
1866	100	120	54	175	136	—	—	—	—	—	585	438	1.3
1867	—	120	54	100	136	—	—	—	—	—	410	446	0.9
1869	—	120	54	135	136	—	—	—	—	—	445	464	1.0
1870	—	120	54	100	250	250	—	—	—	—	774	471	1.7
1872	—	120	—	100	250	250	—	—	—	—	720	495	1.4
1875	—	—	—	100	250	250	—	—	—	—	600	500	1.2
1876	—	—	—	—	250	250	—	—	—	—	500	502	1.0
1878	—	—	—	—	120	250	150	—	—	—	520	507	1.0
1880	—	—	—	—	120	250	150	—	—	—	520	510	1.0
1881	—	—	—	—	120	370	150	—	—	—	640	512	1.2
1882	—	—	—	—	120	220	150	—	—	—	490	518	1.0
1887	—	—	—	—	120	390	150	—	—	—	660	545	1.2
1893	—	—	—	—	200	390	150	—	—	—	740	678	1.1
1900	—	—	—	—	200	390	150	440	—	—	1,180	744	1.6
1901	—	—	—	—	200	390	220	440	—	—	1,250	764	1.6
1906	—	—	—	—	—	390	220	440	—	—	1,050	836	1.3
1910	—	—	—	—	—	390	220	542	—	—	1,152	884	1.3
1913	—	—	—	—	—	390	220	542	100	81	1,333	1,032	1.3
1915	—	—	—	—	—	390	220	542	100	10	1,262	1,035	1.2
1923	—	—	—	—	—	610	—	542	100	114	1,366	1,074	1.3
1925	—	—	—	—	—	610	—	542	100	134	1,386	1,090	1.3
1926	—	—	—	—	—	610	—	542	120	134	1,406	1,090	1.3
1929	—	—	—	—	—	610	—	542	100	170	1,422	1,089	1.3
1930	—	—	—	—	—	*642	—	542	100	170	1,454	1,089	1.4
1933	—	—	—	—	—	*642	—	542	100	170	1,454	1,103	1.3

* Ward for Venereal Diseases with 24 beds not included.

The City has also a part interest in Lightburn Hospital—about 8 beds.

"	"	"	Darnley	"	"	20	"
"	"	"	Blawarthill	"	"	7	"

Smallpox accommodation (20 beds) is provided at Robroyston Hospital, and in the event of an epidemic of smallpox the tuberculosis wards of Robroyston Auxiliary Hospital (100 beds) would be utilised in the first place, and, if necessary, the wards of the main hospital.

Puerperal Fever accommodation (56 beds) has been provided at Robroyston Hospital since October, 1930.

TABLE XX.—(Continued).

[INSTITUTIONAL ACCOMMODATION FOR FEVER AND TUBERCULOSIS PATIENTS :—

			Fever.	Tuberculosis.	Total.
Belvidere Hospital, ...	...	...	*642	—	642
Ruchill Hospital, ...	...	...	542	272	814
Shieldhall Hospital, ...	...	...	100	—	100
Knightswood Hospital, ...	...	...	170	88	258
Bellefield Sanatorium, ...	...	...	—	108	108
Robroyston Sanatorium, ...	...	...	76	492	568
Mearnskirk Sanatorium, ...	...	...	—	466	466
Baird Street Reception House, ...	...	...	†	24	24
			1,530	1,450	2,980
Stobhill General Hospital, ...	...	...	—	45	45
Eastern District General Hospital, ...	...	...	—	3	3
Western District General Hospital, ...	...	...	—	2	2
			—	50	50†
Barnhill Institution, ...	...	...	—	40	40
Southern General Hospital, ...	...	...	—	20	20
			—	60	60†
Beds in Corporation Institutions, ...	...	...	1,530	1,560	3,090
Ochil Hills Sanatorium, ...	...	...	—	38	38
Bridge of Weir Sanatorium, ...	...	...	—	66	66
Blawarthill Hospital, ...	...	...	5	2	7
Strathblane Home, ...	...	...	—	3	3
Lanfine Home, ...	...	...	—	20	20
Darnley Hospital, ...	...	...	4	12	16
Lightburn Hospital, ...	...	...	5	—	5
Beds in other Institutions, ...	...	...	14	141	155†
TOTAL, ...	...	...	1,544	1,701	3,245

* Accommodation for Venereal Disease (24 beds) excluded.

† Accommodation for Venereal Disease and Ophthalmia Neonatorum (24 beds) excluded.

‡ Average daily number occupied during 1933.

TABLE XXI.—SHOWING NUMBERS, AVERAGE, RESIDENCE AND COST OF TREATMENT OF PATIENTS (Ordinary Expenditure, as per Public Health Account and Lunacy and Mental Deficiency Account, excluding Interest on Sinking Fund Charges, and less Revenue Items received otherwise than for the treatment of patients).

COST OF TREATMENT OF PATIENTS (Ordinary Expenditure, as per Public Health Account and Lunacy and Mental Deficiency Account, excluding Interest on Sinking Fund Charges, and less Revenue Items received otherwise than for the treatment of patients).

1. Fever Hospitals and Sanatoria—

Belvidere,	£61,092	14	10	
Ruchill,	84,749	6	5	
Shieldhall,	12,562	0	3	
Knightswood,	24,785	17	4	
Robroyston,	44,546	12	1	
Mearnskirck,	40,650	14	3	
Bellefield,	11,544	11	6	
				£279,931 16

2. General Hospitals—

Stobhill,	£140,343	10	6	
Eastern District,	23,819	10	9	
Western District,	22,773	3	3	
				186,936 4

3. Mental Hospitals—

Woodilee,	£67,536	8	0	
Gartloch,	55,867	18	5	
Hawkhead,	46,987	5	1	
Stoneyetts,	23,281	13	8	
				193,673 5

	Fever Hospitals and Sanatoria.	General Hospitals.	Mental Hospital.
Average Daily Expenditure,	£766 18 9	£512 3 1	£530 12
Average Daily Cost per Patient,	0 5 5	0 4 7	0 3
Average Cost of Treatment per Patient,	15 8 2	8 2 3	—
Average Cost of Bed per Year,	98 17 1	83 12 11	59 6
Average Residence of Patients dismissed,	56.9 days	35.4 days	—

Patients Dismissed from Corporation Institutions, classified as to Disease, Average Residence of Patients Dismissed, and Average Cost at the Daily Rate of 6/—

	Number Dismissed.	Average Residence.	Average Cost.
Enteric Fever,	65	51.25	£17 14
Puerperal Fever,	473	34.83	12 0
Scarlet Fever,	6,376	39.14	13 10
Diphtheria,	1,818	44.27	15 6
Encephalitis Lethargica,	4	87.00	30 1
Acute Primary Pneumonia }	3,073	31.20	10 15
Influenzal-Pneumonia, }			
Tropical Diseases,	71	25.72	8 17
Measles,	105	49.30	17 1
Whooping-cough,	603	38.90	13 9
Phthisis,	1,561	148.06	51 4
Non-Pulmonary Tuberculosis,	689	310.24	107 5

TREATMENT OF PATIENTS IN FEVER, GENERAL, AND MENTAL

Number of Patients Treated and Average Daily Cost per Patient.

(1) In Fever Hospitals and Sanatoria.

	Remain- ing, 31/5/32.	Admitted 1932/33.	Total under Treatment.	Dismissed, 1932/33.	Remain- ing 31/5/33.	Average Daily Number.	Average Daily Cost per Patient.
Frederic Hospital, ...	620	6,009	6,629	6,010	619	568	5/11
Richhill Hospital, ...	935	6,450	7,385	6,542	843	807	5/9
Goldhall Hospital, ...	97	1,001	1,098	1,008	90	93	7/4
Lightwood Hospital, ...	293	2,002	2,295	2,008	287	268	5/1
Broyston Hospital, ...	509	1,067	1,576	1,095	481	490	5/-
Arnskirck Hospital, ...	506	455	961	455	506	500	4/6
Leffield Sanatorium, ...	112	177	289	177	112	111	5/8
Total, ...	3,072	17,161	20,233	17,295	2,938	2,837	5/5*
Enley Joint Hospital, ...	16	101	117	102	15	18	—
Atburn Joint Hospital, ...	9	76	85	73	12	6	—
Warthill Joint Hos- pital, ...	12	82	94	79	15	10	—
Grand Total,	3,109	17,420	20,529	17,549	2,980	2,871	—

(2) In General Hospitals.

Richhill Hospital, ...	1,717	13,959	15,676	14,002	1,674	1,726	4/6
Western District Hosp., ...	272	3,945	4,217	3,946	271	277	4/9
Eastern District Hosp., ...	236	4,880	5,116	4,931	185	232	5/5
Total, ...	2,225	22,784	25,009	22,879	2,130	2,235	4/7†

(3) In Mental Hospitals.

Edilee Mental Hosp., ...	1,236	126	1,362	153	1,209	1,227	3/-
Loch Mental Hosp., ...	818	141	959	115	844	832	3/8
Head Mental Hosp., ...	882	161	1,043	150	893	880	2/11
Heyetts Certified In- stitution, ...	347	7	354	8	346	345	3/8
Total, ...	3,283	435	3,718	426	3,292	3,284	3/3‡

* Interest and Sinking Fund (excluded) averages, 1/6 per patient per day.

† Interest and Sinking Fund (excluded) averages, 9d. per patient per day.

‡ Interest and Sinking Fund (excluded) averages, 3d. per patient per day.

TABLE XXII.—SPECIAL SANITARY OPERATIONS.—(a) FOOD AND DRUGS, &c.

Year.	1933.	1932.	1931.
I. Dairies.			
Registered during year,	355	263	23
Removed from Register,	280	237	19
On Register at 31st Dec.,	1,834	1,759	1,73
Number of Inspections,	23,270	21,960	23,14
Contraventions of Orders or Regulations,	56	58	2
Prosecutions for same,	19	48	2
Repairs or Improvements effected,	33	15	2
II. Dealers in Ice Cream.			
Registered during the year,	75	53	4
Removed from Register,	88	49	6
On Register at 31st Dec.,	574	587	58
Number of Inspections,	8,174	8,185	8,9
Contraventions of Orders or Regulations,	9	3	
Prosecutions for same,	1	1	
Repairs or Improvements effected,	4	3	
III. Byres for Milch Cows.			
Number of Dairy Byres as at 31st Dec.,	51	53	4
„ Cows licensed for,	1,159	1,212	1,1
Average number kept,	922	980	9
Number of Inspections,	452	460	4
IV. Unwholesome Food.			
Number of Inspections,	12,283	12,011	13,0
„ Lots dealt with,	39	42	
Nature of Food destroyed at Inspector's instance with Owners' consent—			
Cheese, (lbs.)	2	5	
Canned Food (various),	336	36	
Flour,	—	70	
Fruit (Dried and Soft),	98,946	25,832	24,0
Pork (Cured),	7	414	
Pork (Fresh),	—	714	3
Milk (Condensed),	—	—	
Mustard,	—	24	
Liquorice Root,	—	—	1
Vegetables,	141,120	35,280	31,0
Eggs (Canned and Frozen),	—	459	
„ (in shell),	—	360	
Fowls,	102	—	
Prosecutions,	—	—	

TABLE XXII.—Continued.

Year.	1933.	1932.	1931.
V. Food and Drugs (Adulteration) Act.			
Informal Samples analysed,	3,591	3,822	3,789
Statutory Samples analysed,	1,375	1,285	1,332
" " found non-genuine,	86	67	66
Proceedings instituted,	60	52	40
Number of Convictions,	54	49	38
Amount of Fines imposed,	£153 9/6	£156 9/3	£134 15/9
Number dismissed or found "Not proven,"	3	—	—
" deserted <i>simpliciter</i> ,	1	1	1
" withdrawn and Expenses paid, ...	2	2	1
Amount of Expenses paid,	£2 6/-	£2 2/-	£2
Prosecutions for Margarine offences,	—	—	1
Fines and Expenses imposed,	—	—	£3 5/9
Non-convictions,	—	—	—
Obstruction,	—	—	—
Fines imposed,	—	—	—
Sending Milk without name and address being on vessel,—	5	—	—
Number of Convictions,	5	—	—
Amount of Fines,	£2 10/-	—	—
Refusal to Sell,	—	—	—
Number of Convictions,	—	—	—
Amount of Fines,	—	—	—
VI. The Sale of Horse-Flesh Regulation Act, 1899.			
Number of premises in which Horse-flesh is sold,	—	—	—
Prosecutions for contraventions of Act,	—	—	—
Fines imposed,	—	—	—
II. Merchandise Marks Acts and Orders.			
Number of Prosecutions,	25	24	12
" Convictions,	25	24	12
Amount of Fines imposed,	£17	£23	£14
VIII. Fish and Game Inspection.			
Under the Glasgow Police Amendment Act, 1890.			
Number of Packages of Fish, Game, Poultry, and Rabbits passed through Fish Market,	2,159,895	2,181,838	1,939,789
" Inspections of Fish Shops, Restaurants, and Hawkers' Barrows and Carts,	1,364	1,436	1,231
" Nuisances discovered therein, ...	—	—	—
Fish and Game destroyed with consent—			
Fresh Fish, (lbs.)	99,231	41,143	88,671
Cured "	14,745	17,809	13,571
Shell "	294	826	982
Crabs and Lobsters,	294	147	438
Venison,	979	495	1,088
Rabbits,	10,822	7,000	5,041
Poultry and Game,	6,717	2,990	4,446
Eggs,	118	48	—

TABLE XXII.—*Continued.*

(b) AIR PURIFICATION.

	Year.	1933.	1932.	1931.
Smoke Prevention.				
Glasgow Police (Further Powers) Act, 1892, Sec. 31, and Motor Vehicles (Construction and Use) Regulations, 1931.				
Number of Inspections of Boiler and other Furnaces,		1,238	1,300	1,307
„ Observations of Chimneys,		28,771	28,575	28,344
„ Intimations of Excess Smoke given,		283	328	342
„ Warning Notices to those contravening the Act,		27	22	20
„ Prosecutions in Police Courts,		33	49	48
„ Convictions,		30	48	40
Amount of Fines imposed,		£31	£57 5/-	£53 15/-
Number of Prosecutions withheld on receiving a promise from Offenders to improve the Furnace Plant,		3	—	3
„ Prosecutions withheld on account of accidents to Furnace Plant, or regular Fireman temporarily off duty,		2	—	1
New Steam Boilers installed to give increased power,		10	9	14
„ Mechanical Stokers fitted to Steam Boiler Furnaces,		10	4	18
„ Steam Boiler Furnaces fitted with Smoke-preventing Appliances,		—	4	3
„ Furnaces in which Anthracite, Coke, or other non-bituminous Fuel has been substituted for ordinary Coal,		20	24	20
„ Furnaces adapted for Smokeless Combustion of Oil Fuel,		—	1	2
„ Steam Boilers replaced by Electric Motors (using Corporation power),...		7	6	11
„ Furnaces formerly Coal-fired, reconstructed for use of Corporation gas,		—	—	1
„ New Chimneys erected or existing Chimneys heightened to give increased draught and carry gases higher,		25	11	15
„ Improvements to Furnaces not coming under any of the above headings,...		15	17	14
Spraying Dungsteads, Ashpits, and Privies.				
Total number of Dungsteads Sprayed from May till September,		*	14,895	15,216
Total Outlay for Wages, Plant, and Material,		*	£382	£329

* Work not undertaken during 1933.

TABLE XXIII.

OPERATIONS OF SANITARY SECTION.

1. (a) Nuisances.	Central.	Northern.	Eastern.	South-Eastern.	South-Western.	City.	
						1933.	1932.
INSPECTIONS made—							
Nuisances,	132,037	132,637	192,255	174,929	145,856	777,714	802,165
Underground Dwellings,	6	—	—	—	—	6	—
Water Storage Cisterns,	349	265	423	417	3	1,457	3,130
Limewashings,	5,624	2,834	11,273	3,101	9,436	32,268	30,829
Stair Cleaning,	21,084	7,146	19,356	7,846	21,859	77,291	102,021
Drain Testing,	17,019	12,536	6,279	5,959	8,801	50,594	46,961
Total,	176,119	155,418	229,586	192,252	185,955	939,330	985,106
Nuisances removed or remedied, Consisting of—	10,751	11,506	15,976	7,769	15,754	61,756	61,978
Apartments, Lobbies, or W.C.'s, with insufficient light or ventila- tion, or otherwise defective in construction,	12	—	3	5	6	26	25
Defective Chimneys causing nuis- ance,	142	94	110	35	153	534	611
Disrepair or dampness in Dwell- ing-houses,	1,239	1,158	2,977	579	2,369	8,322	8,334
Offensive smells from Drains, or other reasonable grounds— smoke test,	151	233	81	161	8	634	658
Drains, Conductors, Soil-pipes, or Rhones choked or defective, sanitary Fittings choked or defective,	3,809	5,050	5,215	2,947	4,798	21,819	22,075
Dirty Houses and Bedding,	1,046	789	1,330	360	1,845	5,370	5,533
Dirty Closets, Stairs, &c. (daily and bi-weekly cleaning),	111	674	948	277	163	2,173	2,313
Houses overcrowded,	461	590	1,180	1,805	1,644	5,680	5,200
Walls of Closets, Staircases, Lobbies, W.C.'s, and external walls of Houses, filthy (lime- washing),	—	1	1	—	1	3	4
Animals or Poultry kept so as to be a nuisance,	1,668	1,708	1,684	587	1,392	7,039	6,695
Accumulations of Garbage or Rubbish,	1	—	8	1	15	25	32
Smells from Decaying Animal Matter or other cause,	609	167	458	180	541	1,955	1,962
Stagnant Water,	23	31	16	15	18	103	61
Premises infested with Rats or other vermin,	8	3	16	8	74	109	103
Sink accommodation and Water Supply required,	68	107	373	54	89	691	258
Water-Closet accommodation required,	1	2	—	—	—	3	4
Water Storage Cisterns dirty, uncovered, or unventilated,	4	1	3	3	5	16	37
Water Supply Pipes defective— tenants without water,	93	124	249	286	—	752	1,346
	134	94	152	35	218	633	828

TABLE XXIII.—*Continued.*OPERATIONS OF SANITARY SECTION.—*Continued.*

	Central.	Northern.	Eastern.	South-Eastern.	South-Western.	City.	
						1933.	1932.
Pit Shaft without adequate protection,	—	1	—	—	—	1	—
Reports to Gas Manager,	16	2	2	—	1	21	14
„ Master of Works,	491	292	525	214	1,180	2,702	2,850
„ Superintendent of Cleansing,	18	13	62	1	181	275	266
„ Water Engineer,	646	372	583	216	1,053	2,870	2,760
Prosecutions—Sheriff Court,	—	—	—	—	—	—	—
„ Police Court,	14	—	4	—	2	20	22
Number Successful,	13	—	3	—	1	17	22
Amount of Fines,	£3/0/6	—	15/-	—	10/6	£4/6/0	£6/4/6
Number of Rotation Cards for Cleansing of Common Stairs, Lobbies, and W.C.'s served on Tenants,	1,822	638	1,239	792	1,292	5,783	9,730
1. (b) Drain Testing.							
Number of Applications for satisfaction of Dean of Guild Court,	505	733	716	865	1,582	4,401	3,718
Number of first Applications to old Tenements or Systems,	210	230	123	148	21	732	755
Number of these found more or less defective,	171	225	104	141	11	652	692
Subsequent applications to old Tenements or Systems,	193	309	68	144	17	731	805
2. Common Lodging Houses.							
Number measured and registered,	—	—	—	—	—	—	—
Total number now on register,	14	6	11	2	4	37	36
With accommodation for,	2,885	2,111	2,856	791	1,756	10,399	10,633
Number of inspections by day,	312	78	541	22	322	1,275	1,523
Number of inspections by night,	54	16	22	—	1	93	68
Number of irregularities,	36	5	20	—	93	154	178
Number of prosecutions,	—	—	—	—	—	—	—
3. Boarding Houses for Emigrants and Seamen.							
Number measured and registered,	—	—	—	—	—	—	—
Total number now on register,	7	—	—	—	—	7	10
With accommodation for,	402	—	—	—	—	402	486
Number of inspections by day,	195	—	—	—	11	206	353
Number of inspections by night,	35	—	—	—	—	35	22
Number of irregularities,	—	—	—	—	—	—	—
Number of prosecutions,	—	—	—	—	—	—	—

TABLE XXIII.—*Continued.*
OPERATIONS OF SANITARY SECTION.—*Continued.*

	Central.	Northern.	Eastern.	South-Eastern.	South-Western.	City.	
						1933.	1932.
4. Houses-Let-in-Lodgings.							
Number measured and registered, ...	12	2	—	—	1	15	4
Total number now on register, ...	21	17	3	13	6	60	56
Number of inspections by day, ...	388	119	51	135	43	736	339
Number of inspections by night, ...	28	32	4	—	—	64	58
Number of irregularities, ...	1	—	—	—	—	1	4
Number of prosecutions, ...	—	—	—	—	—	—	—
5. Farmed-out Houses.							
Number measured and registered, ...	1	—	7	—	3	11	—
Total number now on register, ...	454	24	110	—	12	600	593
Number of inspections by day, ...	3,512	147	2,022	—	173	5,854	8,443
Number of inspections by night, ...	2,120	60	269	—	—	2,449	1,723
Number of irregularities, ...	690	—	39	—	—	729	1,142
Number of prosecutions, ...	—	—	—	—	—	—	2
6. Ticketed Houses.							
Number ticketed for first time, ...	—	—	—	—	—	—	—
Total number now on register, ...	2,214	4,037	2,444	1,679	1,083	11,457	12,673
Number of visits by day, ...	—	450	39	8	—	497	1,787
Number of inspections by night, ...	10,307	13,743	2,516	523	536	27,625	29,360
Number of cases of Overcrowding found and warned, ...	1,177	2,176	422	50	45	3,870	3,965
Number of prosecutions, ...	—	—	—	—	—	—	—
Cubic feet of space in worst cases of Overcrowding, instead of 400, only, ...	145, 163, 184	150, 160, 170	131, 133, 157	180, 184	185, 200, 240	—	—
Number of cases of Overcrowding in houses under 900 cubic feet of space, ...	12	23	4	15	1	55	76
7. Tents and Vans.							
Number of inspections, ...	325	111	379	88	317	1,220	1,667
Number of irregularities, ...	—	—	2	—	—	2	13
Number of prosecutions, ...	—	—	—	—	—	—	—
8. Workshops and Workplaces (excluding Bakehouses).							
Number measured and registered, ...	139	28	66	18	28	279	345
Total number now on register, ...	1,596	525	381	486	444	3,432	3,536
Number of inspections, ...	9,441	1,138	4,463	1,678	824	17,544	17,929
Number found dirty, ...	134	31	29	27	22	243	306
Number found Overcrowded, ...	—	—	—	—	—	—	—
Number found defective in light or ventilation, ...	11	1	1	1	—	14	22
Number found with inadequate or defective W.C. or sink accommodation, ...	15	1	4	1	1	22	26
Number of other nuisances, ...	224	10	45	4	4	287	276
Number of prosecutions, ...	—	—	—	—	—	—	—

TABLE XXIII.—*Continued.*
 OPERATIONS OF SANITARY SECTION.—*Continued.*

	Central.	Northern.	Eastern.	South-Eastern.	South-Western.	City.	
						1933.	1932.
9. Bakehouses.							
Registered during year, ...	13	8	16	5	3	45	57
Total number now on register, ...	113	90	106	117	62	488	472
Number of inspections, ...	612	292	1,166	458	147	2,675	2,430
Number found dirty, ...	58	48	19	5	19	149	157
Number of other nuisances, ...	25	6	28	6	7	72	92
Number of prosecutions, ...	—	—	—	—	—	—	—
10. Homeworkers' Dwellings.							
Total number now on register, ...	36	40	54	58	35	223	250
Number of inspections, ...	72	61	161	179	15	488	751
Number found dirty, ...	—	—	—	—	—	—	—
11. Piggeries.							
Total number now on register, ...	7	22	7	—	4	40	46
Number of inspections, ...	24	108	71	8	5	216	213
Number found dirty, ...	—	18	2	1	—	21	28
Number of other nuisances, ...	—	1	7	—	—	8	3
Number of prosecutions, ...	—	—	—	—	—	—	—
12. Offensive Trades.							
Total number now on register, ...	4	12	43	—	10	69	70
Number of inspections, ...	33	179	1,022	—	54	1,288	1,164
Number of irregularities, ...	—	—	49	—	2	51	60
Number of prosecutions, ...	—	—	—	—	—	—	—
13. Rag Flock Act, 1911.							
Total number of visits, ...	—	—	—	—	—	—	55
Samples submitted for analysis, ...	—	—	—	—	—	—	11
Certified not to conform to standard, ...	—	—	—	—	—	—	—
Number of prosecutions, ...	—	—	—	—	—	—	—
Number of convictions, ...	—	—	—	—	—	—	—
14. Broker's Premises.							
Total number of visits, ...	37	23	333	12	6	411	337
15. Infectious Diseases.							
Total number of visits, ...	22,827	23,801	20,564	19,729	13,033	99,954	100,407

TABLE XXIII.—*Continued.*OPERATIONS OF SANITARY SECTION.—*Continued.*

	Central.	Northern.	Eastern.	South-Eastern.	South-Western.	City.	
16. Housing Acts.						1933.	1932.
Total number of visits,	5,434	5,044	4,570	1,853	1,336	18,237	15,037
17. Work of Female Inspectors.							
Under the Glasgow Corporation (Police) Order, 1904—							
(a) Verminous Children.							
Number of visits to schools, ...	163	308	556	152	361	1,540	1,545
Number of children submitted for inspection,	2,204	4,097	11,120	1,918	7,327	26,666	26,281
Number of children found infested,	2	46	141	267	160	616	572
Number of children found infected,	253	1,125	1,877	20	1,076	4,351	3,957
Number of children found with fleas,	65	231	111	36	38	481	548
Number of children found dirty,	52	360	448	86	69	1,015	954
Number of written notices, ...	2	46	139	409	267	863	810
Number of children cleaned by Guardians,	255	1,570	1,834	376	1,289	5,324	4,935
Number of children cleaned by officers,	—	—	—	—	—	—	—
(b) Homes of Verminous Children.							
Number of houses inspected, ...	688	1,367	1,720	297	1,491	5,563	5,511
Number of houses in which lodgers were found,	1	5	17	7	100	130	157
Number of houses found dirty,	7	46	125	43	3	224	263
Number of houses with dirty bedding,	8	42	126	42	4	222	218
Number of written notices, ...	—	—	89	2	7	98	138
Number of re-inspections, ...	19	191	697	40	4	951	772
Number of houses found cleaned,	7	41	123	31	2	204	249
Number of bedding found cleaned,	7	37	122	35	4	205	205

TABLE XXIII.—*Continued.*OPERATIONS OF SANITARY SECTION.—*Continued.*

	Central.	Northern.	Eastern.	South-Eastern.	South-Western.	City.	
						1933.	1932.
(c) House-to-House Visitation.							
Number of houses visited, ...	20,067	7,569	5,341	2,643	9,735	45,355	51,902
Number of houses in which lodgers were found, ...	713	327	171	115	805	2,131	3,066
Number of houses found dirty,	67	326	343	49	18	803	879
Number of houses with dirty bedding, ...	27	111	42	35	15	230	249
Number of houses—Written notices, ...	4	6	109	12	26	157	146
Number of houses—Re-visits, ...	170	989	434	118	61	1,772	1,898
Number of houses found cleaned, ...	66	324	343	48	18	799	868
Number of houses—Bedding found cleaned, ...	24	103	38	34	16	215	254
(d) Re-housing Scheme Visitation.							
Number of houses visited, ...	1,710	16,804	14,455	5,769	1,038	39,776	35,617
Number of houses in which lodgers were found, ...	128	1,393	188	8	—	1,717	1,436
Number of houses found clean,	1,654	12,127	8,712	5,521	1,021	29,035	25,908
Number of houses found fair,	54	4,494	4,621	110	16	9,295	8,571
Number of houses found unsatisfactory, ...	2	173	1,080	54	—	1,309	1,029
Number of houses found dirty.	—	10	42	84	1	137	109
Number of houses with dirty bedding, ...	—	3	4	56	—	63	31
Number of written notices, ...	—	2	48	14	1	65	69
Number of re-visits, ...	5	485	1,381	361	11	2,243	1,608
Number of houses found cleaned, ...	—	175	1,139	129	6	1,449	1,067
Number of bedding found cleaned, ...	—	3	23	55	—	81	100
(e) Other Work.							
Number of nuisances reported by Female Inspectors, ...	1	10	1,231	66	76	1,384	1,193
Number of infectious disease cases reported by Female Inspectors, ...	—	5	—	11	4	20	57

TABLE XXIV.—GLASGOW.—POPULATION ; BIRTHS AND DEATHS ; BIRTH-RATES AND DEATH-RATES PER 1,000 ; ALSO DEATHS UNDER 1 YEAR, AND DEATH-RATES PER 1,000 BIRTHS SINCE 1860.

Year.	Population.	Births.	Deaths.	Birth-rate per 1,000.	Death-rate per 1,000.	Deaths under 1 Year.	
						Number.	Rate per 1,000 Births.
1860†	389,843	15,943	12,436	40·8	31·9	2,905	182
1861	397,673	16,537	10,936	41·6	27·5	2,544	154
1862	405,789	16,400	11,565	40·4	28·5	2,562	156
1863	413,944	16,986	13,329	41·0	32·2	2,774	163
1864	420,738	17,411	13,674	41·4	32·5	3,051	175
1865	428,123	17,956	13,914	41·9	32·5	3,097	173
1866	437,850	18,288	12,829	41·8	29·3	2,905	159
1867	446,028	18,347	12,578	41·1	28·2	2,895	158
1868	455,000	18,607	13,832	40·9	30·4	3,127	168
1869	464,332	18,495	15,648	39·8	33·7	3,411	184
1870	471,453	19,355	13,955	41·1	29·6	2,991	155
1871	491,900	18,867	15,790	38·4	32·1	3,608	191
1872	494,824	20,158	14,053	40·7	28·4	3,198	159
1873	494,847	19,487	14,499	39·4	29·3	3,255	167
1874	498,270	20,039	15,845	40·2	31·8	3,240	162
1875	499,480	20,825	15,384	41·7	30·8	3,388	163
1876	502,299	20,981	13,763	41·7	27·4	3,166	151
1877	504,487	21,124	13,823	41·9	27·4	3,106	147
1878	507,420	20,622	14,157	40·6	27·9	3,285	159
1879	508,048	19,751	12,498	38·8	24·6	2,504	127
1880	509,732	18,912	13,304	37·1	26·1	2,842	150
1881	512,034	19,106	12,916	37·3	25·2	2,745	144
1882	517,904	19,735	13,046	38·1	25·2	2,959	150
1883	523,154	19,911	14,577	38·1	27·9	3,091	155
1884	528,459	20,557	13,942	38·9	26·4	3,094	151
1885	533,817	19,861	13,492	37·2	25·3	3,100	156
1886	539,231	19,862	13,104	36·8	24·3	2,786	140
1887	544,700	19,328	12,135	35·5	22·3	2,676	138
1888	550,226	19,309	11,681	35·1	21·2	2,560	133
1889	555,808	19,503	13,139	35·1	23·6	3,008	154
1890	561,447	19,279	13,374	34·3	23·8	2,880	149
1891	567,143	19,857	14,324	35·0	25·3	2,946	148
1892	669,059*	22,815	15,218	34·1	22·7	3,168	139
1893	677,883	23,173	15,798	34·2	23·3	3,649	157
1894	686,820	22,644	13,673	34·0	19·9	2,937	130
1895	695,876	22,803	16,344	32·8	23·5	3,538	155
1896	705,052	24,029	14,385	34·1	20·4	3,278	136
1897	714,919	23,880	15,727	33·4	22·0	3,826	160
1898	724,349	24,262	15,333	33·5	21·2	3,792	156
1899	733,903	24,249	15,828	33·0	21·6	3,696	152
1900	743,969	24,362	16,393	32·7	22·0	3,778	153
1901	761,925	24,206	16,197	31·8	21·2	3,607	149
1902	762,789	24,722	15,532	32·4	20·4	3,206	129

* Extended City.

† For earlier years, see Report for 1910, Table liii.

TABLE XXIV.—*Continued.*

Year.	Population.	Births.	Deaths.	Birth-rate per 1,000.	Death-rate per 1,000.	Deaths under 1 Year.	
						Number.	Rate per 1,000 Births.
1903	763,654	25,135	15,073	32.9	19.7	3,663	146
1904	764,521	24,754	15,414	32.4	20.2	3,606	146
1905	765,389	24,316	14,460	31.8	18.9	3,195	131
1906	780,192*	24,560	14,889	31.5	19.1	3,223	131
1907	781,080	24,006	15,659	30.7	20.0	3,116	130
1908	781,969	23,915	15,265	30.6	19.5	3,284	137
1909	782,860	23,140	15,242	29.6	19.5	3,073	133
1910	783,785	22,222	13,395	28.4	17.1	2,694	121
1911	784,680	21,755	13,899	27.7	17.7	3,016	139
1912	785,600	22,044	13,797	28.1	17.6	2,740	124
1913†	1,021,789*	28,688	17,693	28.1	17.3	3,706	129
1914	1,028,440	29,462	17,522	28.6	17.0	3,913	133
1915	1,035,091	27,943	20,159	27.0	19.5	4,007	143
1916	1,041,742	27,094	16,601	26.0	15.9	2,996	111
1917	1,048,393	24,030	16,691	22.9	15.9	3,089	129
1918	1,055,044	23,524	18,362	22.3	17.4	2,660	113
1919	1,061,695	25,835	18,237	24.3	17.2	2,937	114
1920	1,068,346	32,626	16,765	31.5	15.7	3,477	107
1921	1,075,000	29,712	15,625	27.6	14.5	3,138	106
1922	1,074,607	28,298	17,850	26.3	16.6	3,401	120
1923	1,074,215	26,710	14,875	24.9	13.8	2,388	89
1924	1,073,822	25,330	16,868	23.6	15.7	3,005	119
1925	1,073,429	25,416	15,336	23.7	14.3	2,591	102
1926	1,090,380*	24,541	15,731	22.7	14.6	2,548	104
1927	1,089,988	23,578	15,439	21.6	14.2	2,527	107
1928	1,089,595	23,649	15,701	21.7	14.4	2,525	107
1929	1,089,202	22,799	17,760	20.9	16.3	2,438	107
1930	1,088,810	23,322	15,455	21.4	14.2	2,355	101
1931	1,088,461	22,926	15,505	21.1	14.2	2,397	105
1932	1,095,263	22,732	16,071	20.8	14.7	2,542	112
1933	1,103,357	21,361	14,747	19.4	13.4	2,061	96

* Extended City.

‡ Births and Deaths from 1913 are corrected for transfers.

PART II

FEVER AND TUBERCULOSIS
HOSPITALS AND SANATORIA

ANNUAL REPORTS

FOR THE YEAR

1933

PART II

FEVER AND TUBERCULOSIS HOSPITALS.

The number of beds in the fever hospitals has not altered during the year. Table XX in the Appendix gives the accommodation and the changes which have taken place over a considerable period. The hospital accommodation for acute infectious diseases has had to meet the demand occasioned by additions to the list of notifiable diseases during the past few years. The most important of these is pneumonia, which causes a high demand during winter and spring, at a time when other diseases are usually at their maximum incidence.

During the year ten beds at Robroyston Hospital were reserved for cases of abortion because of the pressure on the maternity accommodation in Stobhill Hospital and in the Royal Maternity Hospital. The demand for scarlet fever accommodation during the past two or three years has been exceptional, and it became necessary to select patients for admission on the basis of housing conditions. At the height of the incidence waiting lists had to be established.

The Health Committee instructed the preparation of plans for the new fever hospital on a site purchased at Cowglen, extending to 65 acres, in accordance with the Memorandum on hospital accommodation which appeared in the Annual Report for 1931. The hospital is to contain 350 beds.

The reports of the Superintendents of the fever and tuberculosis hospitals which follow deal with the work of these institutions. The number of admissions to and dismissals from the hospitals and sanatoria are given in Appendix Table XXI, together with a statement of the average residence and cost of treatment.

The tables which follow give (1) the age and sex distribution of cases dismissed well or who died in the fever hospitals; and (2) a statement of altered diagnoses reported during the year 1933. Altogether there were treated in the fever hospitals 7,294 male and 7,535 female patients, a total of 14,829, which compares with 16,090 during the previous year. The deaths among male patients numbered 627, and among females 483, representing mortalities of 8·6 per cent. and 6·4 per cent. respectively of the total dismissals.

The following summary shows the sex mortality from the more important diseases:—

1933: DEATH-RATE PER CENT. OF DISMISSALS FROM
FEVER HOSPITALS.

DISEASE.	Death-rate per cent.	
	Males.	Females.
Scarlet Fever,	1·2	1·1
Diphtheria,	3·9	4·5
Cerebro-spinal Fever,	53·6	53·7
Acute Primary Pneumonia,	19·4	18·6
Acute Influenzal Pneumonia,	30·9	26·7
Whooping Cough,	22·4	23·9

EAR, THROAT, AND NOSE DISEASES.

The following statement summarises the visits made to hospitals by the two specialists. Further details will be found in the various hospital reports:—

RECORD OF ATTENDANCES AND OPERATIONS BY AURISTS
AT CORPORATION HOSPITALS FOR THE YEAR 1933.

	Patients.						Staff.		
	New Cases.		Old Cases.		Operations.		New Cases.	Old Cases.	Operations.
	Age—5	+5	—5	+5	—5	+5			
Belvidere, ...	71	115	71	113	32	38	13	10	2
Ruchill, ...	104	146	54	78	23	40	9	5	—
Knightswood, ...	18	47	—	3	4	22	1	—	—
Shieldhall, ...	25	13	14	22	3	5	1	3	—
Robroyston, ...	—	6	—	2	—	1	6	23	6
Total, ...	218	327	139	218	62	106	30	41	8

GLASGOW.—STATEMENT SHOWING AGE AND SEX DISTRIBUTION OF CASES

		Age.	Enteric Fever.	Paratyphoid Fever.	Puerperal Fever.	Scarlet Fever.	Diph. and Mem. Group.	Erysipelas.	Cerebro-spinal Fever	Continued Fever.	Typhus Fever.	Mothers with Babies.	Infective Jaundice	Polomyelitis.	Acute Primary Pneumonia.	Acute Influenza Pneumonia.
Cases (including Deaths)—																
Males,	...	1	—	2	—	17	18	20	26	—	—	—	—	1	192	2
"	...	2	—	1	—	146	41	8	15	—	—	—	—	1	196	3
"	...	3	2	2	—	216	67	1	8	—	—	—	—	—	94	—
"	...	4	2	2	—	276	73	2	3	—	—	—	—	1	62	1
"	...	5	1	—	—	298	83	2	3	—	—	—	—	—	44	4
"	...	10	1	4	—	1173	401	4	7	1	—	—	—	—	233	12
"	...	15	3	5	—	469	177	9	3	1	—	—	1	—	120	7
"	...	25	2	10	—	211	64	18	9	—	—	—	—	1	179	31
"	...	35	2	4	—	84	20	36	7	—	—	—	—	1	104	23
"	...	45	1	1	—	27	7	71	1	—	—	—	—	—	111	26
"	...	45+	3	2	—	12	3	137	2	—	—	—	—	—	186	25
Total,			17	33	—	2929	954	308	84	2	—	—	1	5	1521	134
Females,	...	1	—	1	—	14	17	13	18	—	—	—	—	2	152	2
"	...	2	—	—	—	125	31	9	4	—	—	—	—	3	124	3
"	...	3	—	2	—	198	52	3	6	—	—	—	—	3	67	—
"	...	4	—	1	—	304	85	1	3	—	—	—	—	1	59	1
"	...	5	1	3	—	333	87	3	4	—	—	—	—	2	44	—
"	...	10	2	9	—	1473	445	10	8	—	—	—	—	—	120	4
"	...	15	2	4	—	618	210	4	10	—	—	—	—	1	47	2
"	...	25	3	23	37	330	141	51	6	—	—	—	—	—	71	9
"	...	35	2	6	48	136	52	45	3	—	—	—	—	—	52	12
"	...	45	2	7	18	64	20	47	3	—	—	—	—	—	40	11
"	...	45+	2	6	—	28	14	155	2	—	—	—	—	—	70	16
Total,			14	62	103	3623	1154	341	67	—	—	—	—	12	846	60
Deaths—																
Males,	...	1	—	1	—	2	1	7	16	—	—	—	—	—	63	—
"	...	2	—	—	—	5	6	—	4	—	—	—	—	—	35	—
"	...	3	—	—	—	2	3	—	4	—	—	—	—	—	5	—
"	...	4	—	—	—	8	6	—	2	—	—	—	—	—	4	—
"	...	5	—	—	—	5	3	—	3	—	—	—	—	—	1	—
"	...	10	—	—	—	7	8	—	3	—	—	—	—	—	12	1
"	...	15	—	—	—	2	8	1	1	—	—	—	—	—	5	—
"	...	25	1	—	—	1	—	—	5	—	—	—	—	—	16	3
"	...	35	1	—	—	1	—	1	4	—	—	—	—	—	17	4
"	...	45	—	—	—	—	1	—	1	—	—	—	—	—	30	8
"	...	45+	2	—	—	1	1	25	2	—	—	—	—	—	107	12
Total,			4	1	—	34	37	34	45	—	—	—	—	—	295	28
Females,	...	1	—	1	—	—	1	3	13	—	—	—	—	1	47	1
"	...	2	—	—	—	12	5	2	—	—	—	—	—	—	23	—
"	...	3	—	—	—	2	2	—	4	—	—	—	—	—	8	—
"	...	4	—	—	—	5	9	1	2	—	—	—	—	—	3	—
"	...	5	—	—	—	2	9	—	1	—	—	—	—	1	3	—
"	...	10	—	—	—	9	16	—	4	—	—	—	—	—	6	—
"	...	15	—	—	—	7	7	—	3	—	—	—	—	—	5	1
"	...	25	—	—	4	1	—	1	4	—	—	—	—	—	6	—
"	...	35	2	—	5	1	1	—	1	—	—	—	—	—	9	3
"	...	45	—	—	5	1	—	3	2	—	—	—	—	—	11	3
"	...	45+	—	—	—	—	2	16	2	—	—	—	—	—	36	8
Total,			2	1	14	40	52	26	36	—	—	—	—	2	157	16

DISMISSED FROM FEVER HOSPITALS, AND DEATHS DURING THE YEAR 1933.

	Pulmonary Tuberculosis.	Other forms of Tuberculosis.	Measles.	German Measles.	Whooping-cough.	Chickenpox.	Mumps.	Influenza.	Veneral Diseases.	Babies with Mothers.	No apparent Disease.	Impetigo.	Others.	Enc. Lethargica.	Polioccephalitis	Beri-beri.	Unclassified.	Puerperal Pyrexia.	Born in Hospital.	TOTALS.
1	—	1	—	5	70	19	—	—	—	2	4	—	60	—	—	—	—	—	1	441
4	—	5	5	4	75	15	—	—	—	—	5	—	61	—	—	—	—	—	—	585
3	—	2	2	2	45	11	—	—	—	—	2	—	29	—	1	—	—	—	—	487
2	—	2	—	2	26	8	1	—	—	—	4	—	22	—	—	—	—	—	—	489
1	—	2	—	2	33	13	—	—	—	—	3	—	22	—	—	—	—	—	—	511
5	2	10	—	17	28	33	2	6	—	—	10	—	87	—	1	—	—	—	—	2037
2	2	3	—	7	—	2	1	4	—	—	4	—	43	1	—	—	—	—	—	862
2	5	5	—	5	—	1	1	1	46	—	2	—	45	1	—	—	1	—	—	642
3	2	2	—	—	—	1	—	3	92	—	1	—	36	—	—	—	1	—	—	428
3	3	—	—	—	—	—	—	3	34	—	1	—	30	—	—	—	—	—	—	322
4	4	2	—	—	—	1	—	1	48	—	—	—	58	—	—	—	—	—	—	490
1	18	34	7	44	277	104	5	18	220	2	36	—	493	2	2	—	2	—	—	7294
—	—	2	2	2	91	12	1	—	—	6	4	—	48	—	—	—	—	—	—	387
2	—	—	2	3	102	9	—	1	—	—	3	—	52	—	—	—	—	—	—	473
—	—	2	—	1	55	23	—	1	—	—	5	—	30	—	1	—	—	—	—	451
—	—	1	1	1	47	9	—	—	—	—	5	—	22	—	—	—	—	—	—	545
—	2	—	1	3	28	9	—	—	—	—	—	—	25	—	—	—	—	—	—	545
1	—	8	1	15	29	29	2	4	—	—	12	—	66	1	—	—	—	—	—	2239
1	4	2	—	5	1	4	1	3	—	—	1	—	40	—	—	—	—	—	—	960
3	7	3	5	35	2	4	8	13	—	—	1	—	100	—	—	—	17	9	—	878
2	2	1	1	9	1	1	—	13	—	—	1	—	48	—	—	—	3	9	—	447
2	2	—	—	—	—	—	1	8	—	—	3	—	27	—	—	—	—	—	—	255
5	2	—	1	—	—	—	—	9	—	—	—	—	43	—	—	—	1	—	—	354
3	19	19	14	74	356	100	13	52	—	6	35	—	501	1	1	—	21	18	—	7535
—	—	1	—	—	33	3	—	—	—	1	—	—	5	—	—	—	—	—	—	133
—	—	5	2	1	20	1	—	—	—	—	—	—	5	—	—	—	—	—	—	85
—	—	2	—	—	5	—	—	—	—	—	—	—	1	—	—	—	—	—	—	22
—	—	2	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	23
—	—	2	—	—	2	1	—	—	—	—	—	—	—	—	—	—	—	—	—	17
—	1	9	—	—	1	1	—	—	—	—	—	—	1	—	—	—	—	—	—	45
—	1	3	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	23
—	1	4	—	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	—	33
—	1	2	—	—	—	—	—	—	—	—	—	—	4	—	—	—	—	—	—	35
—	1	—	—	—	—	—	—	1	—	—	—	—	2	—	—	—	—	—	—	44
—	2	2	—	—	—	—	—	—	1	—	—	—	11	—	—	—	—	—	—	167
—	7	32	2	1	62	6	—	2	1	1	—	—	32	—	—	—	—	—	—	627
—	—	2	1	—	40	4	1	—	—	3	—	—	3	—	—	—	—	—	—	121
—	—	—	—	—	34	—	—	—	—	—	—	—	3	—	—	—	—	—	—	79
—	—	2	—	—	5	2	—	—	—	—	—	—	1	—	1	—	—	—	—	27
—	—	1	—	—	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	26
—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17
—	—	7	—	—	—	—	—	—	—	—	—	—	3	—	—	—	—	—	—	45
—	—	2	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	26
—	—	3	—	1	—	—	—	—	—	—	—	—	4	—	—	—	—	—	—	24
—	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	1	—	25
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	25
—	—	—	—	—	—	—	—	—	—	—	—	—	4	—	—	—	—	—	—	68
—	18	1	1	85	6	1	1	—	3	—	—	—	19	—	1	—	—	1	—	483

GLASGOW.—TABLE SHOWING ALTERATIONS IN DIAGNOSIS
ORIGINALLY CERTIFIED AS

	Typhus Fever.	Enteric Fever.	Continued and Undefined Fever.	Puerperal Fever.	Scarlet Fever.	Scarlet Fever and Other Diseases.	Diphtheria.	Diphtheria and Other Diseases.	Erysipelas.	Cerebro-spinal Fever.	Cerebro-spinal Fever and Other Diseases.	Poliomyelitis.	Pneumonia and Other Diseases.	Pneumonia.
Puerperal Fever and Other Diseases,	—	—	—	1	—	—	—	—	—	—	—	—	—	—
Enteric Fever,	—	—	1	—	—	1	—	—	—	1	—	—	—	—
Paratyphoid B and Other Diseases,	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Puerperal Fever,	—	—	—	—	—	—	—	—	1	—	—	—	—	—
Scarlet Fever,	—	—	—	—	—	24	31	—	1	4	—	—	—	1
Scarlet Fever and Other Diseases, ...	—	—	—	—	27	—	—	—	—	—	—	—	—	—
Diphtheria,	—	—	—	—	7	—	—	4	—	1	—	—	—	—
Diphtheria and Other Diseases, ...	—	—	—	—	—	—	32	2	—	1	—	—	—	—
Cerebro-spinal Fever,	—	—	2	—	—	—	—	—	—	—	1	—	—	1
Dysentery,	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Poliomyelitis,	—	—	—	—	—	—	—	—	—	1	—	—	—	—
Polioencephalitis,	—	—	—	—	1	—	—	—	—	—	—	—	—	—
Pneumonia,	—	10	1	—	12	—	7	—	—	24	—	—	6	—
Pneumonia and Other Diseases, ...	—	—	—	—	—	—	1	—	—	—	—	—	—	—
Erysipelas,	—	—	—	—	—	—	1	—	—	—	—	—	—	—
Tuberculosis (all forms),	—	2	2	—	—	—	—	—	—	37	—	1	—	4
Measles,	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Measles and Other Diseases,	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Roseola,	—	—	—	—	49	1	2	—	—	—	—	—	—	—
Roseola and Other Diseases,	—	—	—	—	1	—	—	—	—	—	—	—	—	—
Whooping-cough,	—	—	—	—	1	—	—	—	—	—	—	—	—	2
Diabetes,	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chickenpox,	—	—	—	—	—	—	—	—	1	—	—	—	—	—
Chickenpox and Other Diseases, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Influenza,	—	1	3	—	4	—	1	—	—	5	—	—	—	4
Other Diseases of the Nervous System,	—	1	1	—	1	—	—	—	5	13	1	—	—	—
Other Diseases of the Respiratory System,	—	—	3	—	—	—	21	—	—	—	—	—	1	8
Diseases of the Circulatory System, ...	—	1	1	—	—	—	1	—	4	—	—	—	—	1
Diseases of the Digestive System, ...	—	8	1	—	88	4	114	3	4	23	1	—	—	4
Other Accidents and Diseases of Pregnancy and Parturition,	—	—	—	5	—	—	—	—	—	—	—	—	—	—
Diseases of the Skin and of the Cellular Tissue,	—	—	2	—	23	—	1	—	40	—	—	—	—	—
No apparent Disease,	—	1	—	—	41	—	7	—	—	1	—	2	—	1
All Other Diseases,	—	2	4	1	7	—	6	—	10	—	—	2	—	3
Encephalitis Lethargica,	—	1	—	—	—	—	—	—	—	1	—	—	—	—
Whooping-cough and Other Diseases,	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Paratyphoid B.,	—	—	3	—	—	—	—	—	—	—	—	—	—	—
Mumps,	—	—	—	—	1	—	—	—	—	—	—	—	—	—
Bronchitis,	—	—	1	—	3	—	9	—	—	1	—	—	—	25
Acute and Chronic Nephritis,	—	—	—	—	—	—	—	—	1	3	—	—	—	—
Cancer,	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Puerperal Pyrexia,	—	—	—	1	—	—	—	—	—	—	—	—	—	—
Impetigo,	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Influenzal Pneumonia,	—	—	—	—	—	—	—	—	—	1	—	—	—	—
	—	27	25	8	266	30	234	9	67	117	3	5	7	61

CASES DISMISSED AND DEATHS DURING 1933.

ORIGINALLY CERTIFIED AS

[illegible]

RECEPTION HOUSES.

In connection with the treatment of pulmonary tuberculosis by artificial pneumothorax referred to in Section V of this report, arrangements were made about the middle of the year to utilise as a refill station part of the accommodation on the second floor of Baird Street Reception House, consisting of two large rooms or wards for this purpose. A dark room was constructed in one of the wards and X-ray equipment, &c., installed. The remainder of the accommodation is still available for ophthalmia neonatorum and the treatment of tuberculosis by ultra-violet rays.

As reported last year, the isolation of children proceeding to country homes was discontinued, and this explains largely the decrease in the number of contacts admitted to Moffat Street Reception House during the year. This Reception House fulfils a useful function in treating scabies, 126 persons being treated there during the year.

CONTACTS, &c., ADMITTED TO MOFFAT STREET RECEPTION HOUSE.

	Adults.	1933. Children.	Total.	1932. Total.
Smallpox Contact,	1	—	1	—
Scarlet Fever,	—	2	2	11
Diphtheria and Carriers,	—	—	—	14
Whooping-cough,	—	1	1	3
Conjunctivitis and Adenitis,	—	—	—	—
Impetigo,	—	2	2	10
Verminous Persons,	3	—	3	10
Scabies,	5	121	126	34
For Observation before admission to Country Homes,	—	—	—	103
Others,	1	2	3	7
Chickenpox,	—	3	3	—
Total,	10	131	141	192

BELVIDERE FEVER HOSPITAL.

For some years the accommodation of the hospital has been taxed to its utmost capacity, and there has been little fluctuation in the volume of patients. On 1st January, 636 patients remained in hospital from the previous year. During 1933, 6,084 were admitted, and 6,135 were treated to a conclusion, leaving 585 in hospital on 31st December, 1933. There were 478 deaths, equivalent to a general mortality rate of 7·8 per cent. 131 of these, or 28 per cent., occurred within 48 hours of admission.

The average duration of residence of patients who recovered was 36 days; in fatal cases, 12 days. The daily average number of patients in residence was 572, a slightly lower figure than in

the previous year, the reduction being due to the policy of restriction of scarlet fever admissions and the closing of certain wooden pavilions which are no longer suitable for the treatment of acute disease. During the first, second, and fourth quarters of the year the daily average of patients varied little, the figures being respectively 613, 607, and 618. For nine months of the year, therefore, the hospital was practically full, and during the three summer months some difficulty was experienced in arranging the holidays of the staff and the cleaning of the wards. Ward 27 East, the two-storey observation ward recently provided, was almost continuously fully occupied. It has, to some extent, relieved the position with regard to the accommodation of doubtful cases and mixed infections, but there is much need for further provision of this kind. Practitioners are now fully alive to the importance of early hospitalisation, but, however desirable this may be, it increases the number of cases received at the stage when the diagnosis is still doubtful and cubicle isolation is required. Moreover, the formation of a waiting list for cases of scarlet fever resulted in the reception of many of these cases at stages when it was impossible to confirm the diagnosis. Further and unusual demands were thus made on the observation accommodation. The outstanding feature for the year was again the prevalence of scarlet fever. For the third year in succession the admissions were above the average, but there are indications that the high cycle of prevalence of recent years is on the decline. 2,830 scarlet fever cases were treated, equivalent to 46 per cent. of the total hospital turnover. Fortunately the incidence of most of the other infections was below normal, and practically no accommodation was required for measles. 837 cases of diphtheria were dealt with. The type was not severe, and the mortality rate was 4.3 per cent. There was a lessened incidence of pneumonia, 995 cases being treated. The mortality rate, however, was slightly higher, viz., 23 per cent. 223 cases of whooping-cough were dealt with, and the only other disease which prevailed to any extent was chickenpox, 192 cases receiving treatment. For the enteric group, the figures were *B. typhosus* 16, paratyphoid *B. 53*. In 68 cases the diagnosis of cerebro-spinal fever was confirmed.

In November it became necessary, on account of the great pressure of scarlet fever cases, to open Ward 15 West, one of the wooden pavilions, as a convalescent ward.

In support of the plea for more cubicle isolation accommodation, it is interesting to note that 110 cases of mixed infections were received. The number of cases correctly certified but in the incubation stage of another disease was 61. In the majority of these there was no available history of contact, and the wards to which they were admitted were therefore exposed to the new

infection and many secondary cases occurred. Fortunately, measles, which is usually the most troublesome factor in this connection, was relatively absent during the year, but in the presence of a measles epidemic it is not unusual to find about one-third of the total admissions either exposed to, in the early stage of, or recovering from measles. In these circumstances, a very difficult problem is created as the cubicle accommodation available is inadequate.

Scarlet Fever.—2,830 cases of scarlet fever came under treatment. This figure, although a little less than the record previous year, is still much above the average. The usual accommodation was fully occupied, and it was necessary to provide four extra wards on the east side of the hospital. The type of disease was slightly but definitely more severe. The experience in this hospital suggests that since 1931 scarlet fever, although still a disease of very low mortality, has been gradually increasing in severity. In 1930 the mortality rate was 0·8 per cent.; in 1931, 0·9 per cent.; in 1932, 1·1 per cent.; this year, 1·3 per cent. The incidence of complications, especially middle ear trouble and nephritis, was greater. Thirty years ago scarlet fever was a disease of high mortality, 10 per cent. being a representative figure. The death-rate gradually diminished until 1930, but, as indicated, there has since been a slight increase, which, in view of the fact that the advantages of serum treatment have been available, must, I think, be regarded as an indication of return to greater severity. It is interesting to note that in some districts of Eastern Europe the disease is presently exhibiting severe manifestations comparable to the type in this country thirty years ago.

The policy hitherto pursued with regard to serum treatment was continued. It was withheld from mild simple cases, but the severer simple, the septic, and toxic cases were all serum treated if received sufficiently early.

The fatal cases numbered 36. 6 of these were due to true toxic scarlet fever and 13 to the septic form of the disease. In 3 cases of simple scarlatina coincident pneumonia was responsible for a fatal issue. Nephritis and uræmia caused 3 deaths. The other fatal cases were as follows:—Scarlet fever and diphtheria, 1; scarlet fever associated with erysipelas, 1; Banti's disease, 1; Vincent's angina, 1; mastoiditis (operated), 2; endocarditis, 3; nephritis, 2.

Among the scarlet fever notifications were 67 cases of mixed infection:—Scarlet fever and diphtheria, 35; scarlet fever and chickenpox, 20; scarlet fever and whooping-cough, 11; scarlet fever and parotitis, 1.

In addition, 30 cases were found to be incubating other infections as follows:—Whooping-cough, 13; chickenpox, 11; rubella, 3; parotitis, 3.

Diphtheria.—837 confirmed cases of diphtheria came under treatment; of these, 36 died. The mortality rate was 4·3 per cent. Most of the cases were of mild or moderate type. Among the severe examples the extensive local lesions and severe manifestations were due rather to the duration of illness prior to treatment than to any special malignancy. In the serum treatment of diphtheria the time factor is important, and it would appear that serum treatment at home while awaiting the result of swabbing of the throat is highly desirable. If, clinically, the case excites suspicion, serum should be given without delay. 13 of the 36 fatal cases were received in a moribund condition and died within 48 hours.

Among the admissions 5 cases were found to be suffering coincidently from other infections—3 from chickenpox and 2 from whooping-cough. 9 were incubating other infections:—Scarlet fever, 3; whooping-cough, 2; chickenpox, 2; parotitis, 2.

Pneumonia.—The number of cases dealt with—995—was somewhat under the average, but the unusual prevalence of scarlet fever again limited, as it did in the previous year, the number of beds available. The death-rate was higher, namely, 23 per cent. No less than 73, or 32 per cent., of the total fatal cases, were received in a moribund condition.

The following table contrasts the age-incidence and mortality in lobar and bronchial cases:—

LOBAR.				BRONCHIAL.			
	Total.	Died.	Moribund on Admission		Total.	Died.	Moribund on Admission.
Under 1 year,	1	1	—	Under 1 year,	123	58	17
1 and under 2,	2	—	—	1 and under 2,	126	29	8
2 „ 3,	3	—	—	2 „ 3,	67	5	1
3 „ 4,	5	—	—	3 „ 4,	36	2	—
4 „ 5,	4	—	—	4 „ 5,	36	4	—
5 „ 10,	86	5	—	5 „ 10,	57	5	1
10 „ 15,	54	3	1	10 „ 15,	14	2	—
15 „ 20,	52	3	2	15 „ 20,	11	2	1
20 „ 25,	47	2	—	20 „ 25,	2	—	—
25 „ 35,	56	10	3	25 „ 35,	17	1	—
35 „ 45,	50	22	9	35 „ 45,	14	4	—
45 and over,	76	48	19	45 and over,	46	23	13
Total,	436	94	34	Total,	559	135	41

Almost 24 per cent. of the bronchial cases were in children under a year and 44 per cent. were under 2 years.

Dr. Montgomery's investigation with regard to the possible correlation of the clinical type of lobar pneumonia with the serological type of the infecting pneumococcus was continued. The figures obtained indicated that lobar pneumonia was much more deadly in the older-age group, and that lobar pneumonia resulting from Type III and Type II pneumococcus was much more to be dreaded than that resulting from the other types. Of 117 cases of male pneumonia above the age of 15 years, 23 died. This gives a mortality rate of 19.65 per cent., which is considerably higher than that obtained in 1932 for a similar group of cases. The most constant therapeutic measure was the use of oxygen, which was exhibited by means of Haldane's apparatus in every case of lobar pneumonia. The opinion was formed that this mode of treatment was of value in easing the distress of the patient. No difficulty was found in persuading patients to use the apparatus when its value had been explained.

Puerperal Fever and Puerperal Pyrexia.—128 patients, which represents only about one-third of the total dealt with under the above certifications, were treated in Belvidere. The mortality rate was 11.7 per cent. The following figures show the incidence and types according to the final diagnosis:—

	Incidence per cent.	Mortality per cent.
Puerperal Fever,	60.16	16.88
Puerperal Pyrexia,	14.06	11.11
Septic Abortion,	16.41	0.0
Simple "	5.46	0.0
Non-puerperal Conditions,	3.91	0.0
	<hr/> 100.00 <hr/>	<hr/> 11.71 <hr/>

From the table it is seen that 5.46 per cent. of the cases admitted were simple abortions. The introduction of such cases to a ward devoted to infective conditions of the puerperium has caused some concern, but, fortunately, special provision is now available elsewhere. The type of infecting organism has been determined in each septic case. Staphylococci, bacilli coli, streptococci, and pneumococci, were found to be the prevalent invaders. Antistreptococcal serum (scarlet fever type) has been used extensively, both therapeutically and prophylactically. There is no doubt that it was of value in certain cases. Suitable patients received a 50 per cent. mixture of glycerine and acriflavine (1:500) by intrauterine injection. Acriflavine solution was given intravenously when indicated. Vitamin A. preparations were also frequently exhibited.

Measles was remarkable for its absence, and only 4 cases, all complicated, received treatment during the year.

Whooping-cough was prevalent. 223 cases were treated to a conclusion, and of these, 55 died, equivalent to a mortality rate

of 24·7 per cent. The majority of the cases were of a severe character and were already suffering from broncho-pneumonia when admitted.

Enteric Group.—Only female patients were received. The confirmed cases numbered 69, of which 4 died. 16 were *B. typhosus* infections, and 53 suffered from paratyphosus *B.* In addition, there were 12 cases of bacillary dysentery.

Cerebro-spinal Fever.—There were 68 verified cases of this disease, mostly in children under 5 years. 34 deaths occurred. All the cases were of sporadic type and no petechial rashes were observed.

Chickenpox was very prevalent, and the admissions were to some extent restricted to cases complicated with other conditions. 192 patients were received, and there were 10 deaths. None of these was due to chickenpox. The causes were:—Pneumonia, 4; cerebro-spinal fever, 1; whooping-cough, 1; pneumococcal meningitis, 1; congenital heart disease, 1; enteritis, 1; infantile convulsions, 1.

Venereal Disease.—The number of cases treated during the year was 220, a decrease of 22 as compared with the previous year. The average number of residents during the year was 18. The majority of patients were admitted from the various clinics because of complications arising during treatment. The number of cases admitted directly to the ward without previous treatment was 35.

Syphilis.—There were 56 cases of syphilis, classified as follows:—Primary syphilis, 20; secondary syphilis, 13; latent or tertiary syphilis, 4; all later stages, 17; congenital, 2—total, 56.

Gonorrhœa.—128 patients were treated, comprising 110 acute cases and 18 chronic. Other conditions dealt with were as follows:—21 cases of soft chancre, 7 cases of non-specific venereal disease. Non-venereal cases numbered 8, including tuberculous epididymitis and orchitis following mumps. 116 patients received treatment with arsenobenzol compounds, and in no case was there any sign of arsenical intolerance. 9 cases were admitted suffering from arsenical sequelæ. Of these, 2 had jaundice and 7 dermatitis. All made good recoveries. One death occurred. The patient succumbed within 48 hours of admission from gangrene of the thigh following an extensive ulcerating tertiary lesion.

THOMAS ARCHIBALD,
Physician-Superintendent.

7th May, 1934.

BELVIDERE HOSPITAL.—STATEMENT OF CASES TREATED ACCORDING TO SEX. DATA BASED ON DISMISSALS AND DEATHS FOR YEAR 1933.

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	Admitted.		Dismissed.		Died.		Remaining in Hospital, 31st Dec, 1933, per cent.		Average Residence (days).		Deaths.		Ages.		Altered Diagnosis.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Males.	Females.	
Typhus, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enteric Fever, ...	3	9	5	9	—	—	—	—	—	—	—	—	—	—	—
Paratyphoid Fever (B.), ...	12	46	9	42	1	1	2	3	10.0	2.3	49	8	4	1	—
Continued and Undefined Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	6	3	1
Puerperal Fever, ...	—	98	—	88	—	—	—	—	—	—	—	—	—	—	—
Smallpox, ...	—	—	—	—	—	—	10	—	48	—	15	—	—	—	13
Scarlet Fever, ...	1245	1551	1218	1576	18	18	154	161	38	39	12	20	—	—	8
Diphtheria and Mem. Croup,	408	498	365	436	13	23	58	66	41	41	7	11	403	697	465
Erysipelas, ...	—	3	—	2	—	—	1	—	—	—	—	—	108	227	116
Cholera, ...	—	—	—	—	—	—	—	—	27	—	—	—	—	—	1
Cerebro-spinal Fever, ...	44	21	24	10	23	11	2	4	58	41	14	24	32	4	11
Trachoma, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	18
Encephalitis Lethargica, ...	—	—	1	—	—	—	—	—	115	—	—	—	—	—	2
Acute Poliomyelitis, ...	1	—	1	—	—	—	—	—	29	—	—	—	1	—	—
Acute Polymyelitis, ...	—	2	1	1	1	—	—	—	74	74	—	—	—	—	—
Acute Primary Pneumonia,	595	304	458	244	142	68	36	26	23.7	21.8	25	30	93	1	2
Acute Influenzal Pneumonia,	57	17	50	14	13	6	5	2	20.6	30.0	27	30	12	146	225
Malaria, ...	6	—	6	—	—	—	—	—	27	—	4	13	2	7	54
Dysentery, ...	2	10	2	10	—	—	—	—	27	—	—	—	—	—	6
Relapsing Fever, ...	—	—	—	—	—	—	—	—	18	17	—	—	1	1	4
Pulmonary Tuberculosis, ...	5	—	3	—	2	—	—	40.0	17	—	8	—	—	—	—
Other forms of Tuberculosis,	15	9	1	—	14	9	—	—	33	11	6	—	—	—	—
Measles, ...	2	3	1	1	1	1	1	1	50.0	50.0	16	4	6	5	4
German Measles, ...	14	29	16	27	1	1	1	5.9	3.6	13	9	12	2	—	2
Whooping-cough, ...	87	109	75	93	24	31	1	24.2	25.0	49	52	11	10	3	2
Chickenpox, ...	99	97	94	88	5	5	13	12	5.1	5.4	39	30	86	13	112
Mumps, ...	—	3	—	2	—	—	—	—	33.3	—	24	1	63	34	2
Veneral Diseases, ...	215	—	219	—	1	—	11	0.5	30	—	2	—	—	—	58
Babies with Mothers, ...	1	2	—	1	1	—	—	100.0	12	1	—	—	—	1	1
No apparent Disease,	10	5	10	5	—	—	—	—	8	—	—	—	—	—	—
Others, ...	182	191	181	190	14	11	5	7	5.5	20	22	16	7	3	3
Influenza, ...	12	42	14	47	—	—	1	—	14	19	4	—	74	64	57
Puerperal Pyrexia, ...	—	—	—	17	—	—	—	—	35	—	1	—	8	6	—
Impetigo, ...	—	19	—	—	—	—	—	—	—	—	—	—	—	—	5
Mothers with Babies,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	18
Infective jaundice, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5

Total, ... 3016 3068 2754 2903 273 205 288 297 9.0 6.6 35 37 10 14 1030 1224 773 1028 1345 735 649

RUCHILL FEVER AND TUBERCULOSIS HOSPITAL.

The number of cases treated in hospital during the year 1933 was 6,016, a decrease of 476 on last year's total. This fall in numbers is due in large part to a decrease in the number of cases of scarlet fever and measles dealt with. The general mortality rate shows a fall from 8·7 per cent. last year to 7·6 per cent.

Enteric fever cases numbered only 11, as compared with 23 last year, but the mortality rate was much higher, namely, 36 per cent. Cases of paratyphoid infection were increased from 10 to 31, with no deaths. Scarlet fever patients treated were 2,383, or a decrease of 343 on last year. The disease continued to be very mild, the mortality rate being only ·96 per cent.

The cases of diphtheria showed an increase of 166 patients, and the mortality rate was practically the same. The investigation into the prevalence of the more serious type of infection in this disease has been completed, and the result shows that, so far, Glasgow has no great proportion of the gravis organism, though a fair number of intermediate forms were identified.

Erysipelas continued to increase, and 637 cases were treated, compared with 532 last year. The mortality rate showed a fractional decrease, though still fairly high, namely, 9·3 per cent. Cases of cerebro-spinal fever were practically the same in number as last year, namely, 82, but the mortality rate showed a further fall, from 66 per cent. to 56 per cent. Fourteen cases of acute poliomyelitis were admitted, of which 1 died. Arrangements were made whereby orthopaedic treatment could be continued in Mearnskirk Hospital, and accordingly many were transferred there after the acute stage had subsided.

Acute primary pneumonia continued to show a decrease, 53 fewer patients being treated than last year. The mortality rate was less, namely, 17·1 per cent., as compared with 18·7 per cent. There were comparatively few cases of influenzal pneumonia, the total being only 44. The mortality rate, as usual, was much higher than for primary pneumonia, being 27·5 per cent. Dysentery cases numbered 33, as compared with 59 last year, but the mortality rate was much lower, being only 2·6 per cent. Measles showed the most striking drop in numbers, in fact for the best part of the year it was non-existent. Last year 485 cases were treated, whereas only 9 cases came into the present year's review. Whooping-cough, on the other hand, showed a marked increase, the cases dealt with jumping from 169 in 1932 to 388 in 1933. The mortality rate was high (21 per cent.), though somewhat lower than the previous year's (27 per cent.).

The Visiting Aural Surgeon attended in all 382 patients, of whom 250 were new cases. The remaining 132 patients were those who had been seen on one or more previous occasion. Sixty-three operations were performed by the Aural Surgeon, the majority being for the removal of tonsils and adenoids.

Dr. H. Baxter, Medical Officer in charge of the Tuberculosis Section of the hospital, presents the following account of the work done therein:—

The total number of cases treated in the tuberculosis wards during 1933 was 733, or 102 less than the previous year. The proportion of deaths to the total admissions for the year was 25.9 per cent., representing a slight decrease from the previous year, while the figure corrected for deaths due to pulmonary tuberculosis was 24 per cent. The average stay in hospital per patient in 1933 was slightly over 4 months. The table showing the returns of tuberculosis cases has again been compiled using the Ministry of Health classification, and the most outstanding feature is the drop in the number of advanced phthisis cases classified T.B. + Group III.

Treatment has been maintained along the usual lines of rest, diet, and graduated fresh air, convalescence, and exercise. Open-air work in the grounds has been encouraged and found beneficial. In certain cases artificial heliotherapy and gold salt therapy have proved efficacious. Aspiration, gas replacement, artificial pneumothorax, gelatinothorax, and phrenic nerve therapy were extensively used in suitable cases. During the year 101 cases were treated by collapse therapy, of whom 16 proved unsuccessful, or were abandoned on account of adherent pleura.

The number of out-patients attending at the sanatorium operating theatre reached the total of 131 at the end of the year, and this extra work has been found to be seriously encroaching on the routine work of the medical, nursing, and X-ray staffs. The establishment of the sanatorium operating theatre has been fully justified, and during the year 7 major operations, 38 minor operations, and 1,387 artificial pneumothorax refills were performed.

In September, 1933, the Visiting Dentist commenced work, and during the remainder of the year undertook 16 sessions. There were 14 consultations and 124 extractions, 8 patients under general anæsthesia. When the dental furnishings and gas and oxygen apparatus are completely installed, this work will be more readily and easily undertaken. The medical staff performed 54 extractions during the year, from January until September.

The tuberculosis patients have taken full advantage of the facilities provided for indoor and outdoor recreation, and, even with the strictly enforced discipline, there have been very few complaints.

W. M. ELLIOTT,

Physician-Superintendent.

June, 1934.

RUCHILL HOSPITAL—TUBERCULOSIS.

CASES DISMISSED AND DEATHS DURING THE YEAR 1933 AND THE AVERAGE RESIDENCE.

	Males.	Females.	No. of Cases Dismissed. Well.	No. of Cases Dismissed. Died.	Average Residence (days).							Ages.			Result of Treatment.		
					- 50	- 100	- 150	- 200	- 300	300 +	Average Days.	- 5	- 15	- 25	25 +	Much Im-proved	Im-not proved
Pulmonary Tuberculosis.																	
T.B.0, Group I, ...	9	10	19	—	2	7	1	3	3	3	157	1	9	4	5	10	9
II, ...	23	26	49	—	3	13	12	9	9	9	161	2	9	21	17	24	23
III, ...	5	7	5	7	5	4	1	2	—	—	79	1	4	3	4	—	2
T.B.—, Group I, ...	7	5	12	—	1	6	4	—	—	—	253	—	1	5	6	4	7
II, ...	16	14	29	1	4	9	7	2	5	3	160	—	3	12	15	9	18
III, ...	6	8	7	7	7	5	—	—	2	—	71	—	—	4	10	2	3
T.B.+, Group I, ...	10	4	13	1	3	4	2	2	3	—	123	—	—	8	6	2	9
II, ...	102	113	202	13	26	62	59	30	19	19	153	—	7	83	125	54	132
III, ...	123	169	144	148	108	58	59	30	25	12	101	—	6	115	171	19	67
Tuberculosis not confirmed,	7	5	12	—	6	4	—	—	—	2	9	—	3	1	8	4	7
Tumour of Lung, ...	7	2	5	4	5	2	1	1	—	—	64	—	—	1	8	—	3
Tuberculous Meningitis, ...	2	1	—	3	3	—	—	—	—	—	10	2	1	—	—	—	—
Abdominal Tuberculosis, ...	—	2	2	—	—	1	1	—	—	—	92	—	—	—	2	1	1
Bronchiectasis, ...	11	—	9	2	1	2	1	—	1	6	298	1	5	1	4	4	5
Post-Pneumonic conditions,	2	3	5	—	—	2	2	—	1	—	122	—	2	2	1	4	1
Other conditions, ...	20	14	30	4	11	11	9	2	—	1	80	5	12	8	9	12	14
	350	383	543	190	185	190	159	81	68	50	126	12	62	268	391	149	302

KNIGHTSWOOD FEVER HOSPITAL AND SANATORIUM.

The number of patients dismissed, including those who died during the year 1933, was only 1885, as against 2,401 for the previous year. The great diminution in the number of dismissals was probably due to the fine climatic conditions throughout the year and to the freedom from severe epidemics of pneumonia, and also to the fact that three of the pavilions had to be closed for a few weeks in order to allow the plaster work on the roofs to be renewed. All the wards were used for the treatment of fevers, except two pavilions accommodating 80 patients with advanced phthisis. The number of fever patients dismissed from hospital was 1,540, while 112 died, making a total of 1,652 patients. The mortality rate was 6·7 per cent., as against 7·2 per cent. for the previous year.

Pneumonia.—Patients treated totalled 429, and of these, 235 were lobar pneumonia; 68 were cases of broncho-pneumonia in children; 50 were cases of influenzal pneumonia; and 76 were found definitely either not to be suffering from pneumonia or merely from bronchitis. The death-rate for the whole group was 16·7 per cent., which was less than that for the previous year, 18·07 per cent. The death-rate of the 235 verified cases of lobar pneumonia was 18·7 per cent., which was very much less than that for the verified cases of lobar pneumonia for the previous year, 25·3 per cent. The following table shows the distribution of 172 typed cases of lobar pneumonia admitted during the year in relation to the frequency and fatality percentages of each type:—

	Cases.	Deaths.	Frequency Percentage.	Fatality Percentage.
Type I,	47	6	27·3	12·7
Type II,	71	15	41·2	21·1
Type III,	10	6	5·8	60
Group IV,	44	6	25·5	13·5
Total,	172	33	—	19·1

The data shown above reveals the high incidence and the high fatality rate of Type II infections, and that the incidence and the fatality rate of Type I and Group IV infections are about the same. In the course of an investigation by Dr. Christie on lobar pneumonia special attention was paid to bacteræmia. An attempt was made to take daily blood cultures from each case during the course of the disease. 120 cases were examined, mild

and abortive infections being excluded. Table I sets forth the percentages of positive results in the series under consideration:—

TABLE I.—RESULTS OF BLOOD CULTURES IN 120 CASES OF LOBAR PNEUMONIA.

Type of Pneumococcus.		Cases Cultured.	Cases Positive.	Percentages.
I. ...	...	38	18	47·4
II. ...	...	51	28	55
III. ...	...	9	4	44·4
IV. ...	...	22	4	18·2
Total,	...	120	54	45·0

The percentage of positive results for the whole series is 45, and the percentages for Types I, II, and III are approximately equal. The relationship of bacteræmia to death-rate is expressed in Table II. The data presented demonstrate the great difference in mortality between cases with positive cultures and those in which no bacteræmia occurred. In the one series the death-rate is 55 per cent., as against 3 per cent. in the other:—

TABLE II.—RELATIONSHIP OF BACTERÆMIA TO DEATH-RATE.

Type of Pneumococcus.	Cases Studied.		Cases showing Positive Blood Cultures.		Cases showing Negative Blood Cultures.	
	Cases.	Deaths and per cent.	Cases.	Deaths and per cent.	Cases.	Deaths and per cent.
I. ...	38	8 (21)	18	8 (44·4)	20	0
II. ...	51	19 (37·2)	28	17 (60·7)	23	2 (8·7)
III. ...	9	4 (44·4)	4	4 (100)	5	0
IV. ...	22	1 (4·5)	4	1 (25·0)	18	0
Total,	120	32 (26·7)	54	30 (55·5)	66	2 (3·0)

The conclusions to be drawn from this investigation are (1) pneumococcal septicæmia is a frequent cause of death in lobar pneumonia; (2) bacteræmia is a common feature of lobar pneumonia; (3) the persistence of a bacteræmia throughout the course of the illness or a rising bacteræmia after the fourth day of illness is of grave prognostic significance, indicating the development of a local complication or a fatal septicæmia; (4) there appeared to be no essential difference in the development of bacteræmia in Type I or Type II infections apart from the fact that the secondary septicæmia after the fourth day of illness occurred more frequently in Type II pneumonias, and played an important part in accounting for the high death-rate in these illnesses. Dr. Christie also conducted an investigation into the significance of pneumococcal virulence. Fifty strains of pneumococci were tested for virulence. The conclusions to be drawn from this investigation are (1) the virulence of the type specific pneumococci does not alter whether the organisms exist as

saprophytes in the nasopharynx or whether they are responsible for acute pneumonia; (2) Types I and II pneumococci are organisms which possess the highest degree of virulence; (3) the Type III pneumococcus is also of very high virulence, but is not consistently virulent; (4) the Group IV pneumococci show varying degrees of virulence.

Measles.—The number of cases treated was only 8 as the epidemic which was expected to commence in November was delayed, and no evidence of its appearance was observed up to the end of the year. From the commencement of the year a very large amount of immune adult serum was collected, 7,000 c.c. in all, but, unfortunately, the delay in the appearance of the epidemic might destroy the efficacy of this preparation, as it is just possible that this serum might require to be freshly prepared. It is hoped to be able to give the results of this investigation in the Annual Report for next year, provided that sufficient opportunities occur for having it tested as to (1) power of producing passive immunity; (2) dosage; (3) the length of time it will retain its immunising power.

Convalescent measles serum has already been proved to be of value in the prophylaxis of measles, but it cannot be prepared until the epidemic has commenced, and in this way much of its usefulness may be lost. Immune adult serum on the other hand, if it is proved to be of value, can be prepared beforehand, but it is necessary to find out how long it will retain its immunising properties so as to determine the earliest date at which it may be safe to commence to make the preparation before the expected onset of an epidemic.

Scarlet Fever.—Fewer patients were treated, 806 as against 1,078 for the previous year. The type of case was a little more severe, the mortality rate being 1·6 per cent. as against 0·78 per cent. in the preceding year. Thirteen deaths occurred, and these were practically all either cases of septic or of toxic scarlet fever.

A man, aged 50, died from what can only be described as an hæmorrhagic form of scarlatina maligna with hæmorrhages from the mucous membranes and into the skin. The patient was only moderately ill at the onset, the hæmorrhagic character of the disease developing later, and death occurred on the seventh day of illness. It has been suggested that cases of this kind formerly reported were cases of hæmorrhagic smallpox which frequently present a scarlet initial rash, but this case was undoubtedly one of scarlet fever.

A woman, age 36, died from toxic scarlet fever on the tenth day of illness. On admission she was quite insane and later developed a wild form of delirium, the temperature rising to 108 shortly before death. This is a form of the illness which must be of very rare occurrence. Apart from these two cases, the illness was more or less mild and did not present any unusual features. The new concentrated antitoxin for scarlet fever was only administered to 151 acutely-ill patients as the type of case admitted was usually not very severe, and the majority of the patients recovered quite well without the administration of the antitoxin.

There were submitted to the Dick Test 23 nurses, 6 of whom were found to give a positive reaction, all of whom were later actively immunised.

During the year the Aurist visited weekly all patients suffering from otitis media, and it was only found necessary to remove the tonsils and adenoids of 13 of these patients in order to hasten the drying up of the discharge. During the same period the conservative mastoid operation was performed on 7 occasions with a similar object.

Diphtheria.—Fewer numbers were treated, 254 as against 278 for the previous year. The mortality rate was less, 4·3 per cent. as against 6·4 per cent. for the preceding year. Eleven deaths occurred, 9 due to cardiac paralysis and 2 following tracheotomy. Many malignant forms of the disease were admitted from this district, and this accounts for the 9 deaths due to cardiac paralysis. The Aurist enucleated the tonsils and removed the adenoids of 4 patients who were found to be carriers, and in a very short time after the operation the patients were able to be dismissed.

The Schick Test was performed on 20 nurses, 6 of whom were found to give a positive reaction and were later actively immunised with toxoid antitoxin mixture.

Pulmonary Tuberculosis.—During the past year 155 phthisis cases were discharged from hospital and 78 died, making a total of 233 patients. The hospital was mainly used for the treatment and isolation of the more advanced types of patient. As an illustration, no less than 80·6 per cent. were in an advanced stage of the disease on admission. The following table shows the medical classification on admission:—

Stage of Disease.				Number of Cases.	Number of Deaths in each Group.
Early,...	...	...	...	9	—
Intermediate,	...	...	...	36	—
Advanced,	...	...	...	188	78
Total, ...				233	78

Details of each of these groups are shown in the following table:—

Stage of Disease.		Arrested.	Much improved.	Improved.	Not improved.	Died.	Total.
Early Cases,	...	3	1	5	—	—	9
Intermediate,	...	3	8	20	5	—	36
Advanced,	...	2	12	53	43	78	188
Total, ...		8	21	78	48	78	233

Apart from careful nursing and attention to the general health, no special form of treatment was adopted, as the majority were in a very advanced stage of the disease.

The health of the hospital staff was good, no illness of a very serious nature having occurred.

WILLIAM DOW,
Physician-Superintendent.

May, 1934.

SHIELDHALL FEVER HOSPITAL.

During the year 1,026 patients passed through the hospital, a decrease of 48 as compared with the previous twelve months. The general death-rate was 6·1 per cent., as compared with 7·8 per cent. for 1932, the low figure being attributable to the preponderance of scarlatina cases and to the absence of measles and whooping-cough. The largest number of beds occupied was 122, on 17th November, and the smallest 53, on 22nd August, the average being 89. The wards were devoted almost entirely to scarlatina, diphtheria, and pneumonia.

Scarlatina.—508 patients were treated. This is the largest number for many years, the disease not having shown its usual seasonal decline and remaining epidemic throughout the summer, a result perhaps of the abnormally dry weather. The mortality rate, 0·4 per cent., is in contrast with that of 1932, when the high death-rate suggested an increasing malignancy of the infection. Of the complications, otorrhœa (7·3 per cent.), rhinorrhœa (10·2 per cent.), cervical adenitis (20·7 per cent.), and arthritis (3·3 per cent.) were reduced in frequency; while nephritis and albuminuria (4·3 per cent.) were nearly twice as common as in 1932. Endocarditis appeared in four patients, one of whom, a girl of nine years, subsequently showed hydrothorax, ascites, and general œdema, and died after seven months' residence in hospital. In the only other fatal case death was due to convulsions attributed to teething.

The work of the Aural Surgeon was comparatively light, operations being limited to five tonsillectomies and two mastoids. Total number of patients attended, 41. The results of operations are given in tabular form, as in previous reports:—

	Otorrhœa.	Rhinorrhœa
Immediate cessation of discharge, ...	1	—
Gradual improvement,	3	—
No improvement,	1	—
	<hr/> 5 <hr/>	<hr/> — <hr/>

It is inevitable that a small number of children leave hospital with discharging ears, and a more complete follow-up system might be found of value. Such children of school age are notified to the Education Health Department.

Diphtheria.—173 patients were treated, the types observed being as follows:—Faucial, 154; faucial and nasal, 11; nasal, 2; faucial and laryngeal, 3; and laryngeal, 3. Three children required tracheotomy for the relief of croup, all of them making a good recovery. As usual, the faucial and nasal group included the most severe infections, there being several examples of circulatory failure, paralysis of the palate and pharynx, and, in the fatal cases, hæmorrhages. Of the eight deaths, three took place on the day of admission and three others within four days. Late arrival in hospital, however, is becoming much less common than it was a few years ago.

Pneumonia.—295 patients were treated, broncho-pneumonia being in almost equal numbers with the lobar type, but, as is to be expected, of higher mortality (19·3 per cent. as compared with 14·0). Enteritis remains a very serious complication in babies, though lately seen much less frequently. Other grave complications of broncho-pneumonia observed were convulsions, pneumococcal meningitis (2 cases), and tuberculous peritonitis. A further trial has been made, with encouraging results, of Parke Davis' Haliverol in the treatment of malnutrition and rickets. The treatment of *B. coli* infection of the urinary tract sometimes brings about a remarkable improvement in puny, irritable children.

In lobar pneumonia, empyema, sometimes preceded by serous pleural effusion, is a common sequel. Nine cases were observed in 1933, and may be tabulated as follows:—Under two years, 2; over six and under fourteen years, 3; over fourteen, 4; the eldest being 37 years. In 3 the right side was affected, in 6 the left. The pus was of streptococcal type in 2 and of pneumococcal type in 7. Three were treated by aspiration and 6 by rib-resection under local anæsthesia, with closed drainage. Three patients required subsequent irrigation with Dakin's solution. Death followed in the two youngest of the series, and in a streptococcal case (age 27) where operation was followed by pyæmia. The remainder made good recoveries.

Other Diseases.—The 50 cases in this group included three of rubella, one each of whooping-cough, erysipelas, mumps, and cerebro-spinal fever, and 43 non-infectious conditions. These last were mainly scarlatina notifications, which proved on admission to be examples of tonsillitis, erythema, &c., or to have no apparent disease. In all, 61 diagnoses were revised during the year.

WILLIAM NAPIER,
Physician-Superintendent.

May, 1934.

SHIELDHALL HOSPITAL.—STATEMENT OF CASES TREATED ACCORDING TO SEX.
DATA BASED ON DISMISSALS AND DEATHS FOR THE YEAR 1933.

[illegible]

ROBROYSTON HOSPITAL.

Robroyston Hospital has continued in the past year the treatment of pulmonary and non-pulmonary tuberculosis, puerperal sepsis, and pneumonia. The total accommodation is divided as follows:—

Tuberculosis	Pulmonary, ...	...	...	...	150	} 440
	Non-pulmonary,	...	...	...	290	
Puerperal Sepsis,	...	...	...	...	...	56
Pneumonia,	...	...	...	...	...	56

PULMONARY TUBERCULOSIS.

There is very little new to report for the past year. The average patient is far advanced in his illness when admitted, and to offer such a patient a reasonable period of moderately good health requires a lengthy period in hospital. No appreciable drop in the residence period can therefore be recorded, and similarly there is little change in the proportion of deaths.

Treatment.—There have been no great departures from the orthodox lines of treatment. For the early unilateral lesion in patients with fair powers of resistance artificial pneumothorax is undoubtedly the treatment of choice, the total rising from 30 to 42 for the year. In a further 6 patients an unsuccessful attempt was made to induce collapse. The continuance of these pneumothoraces and others still under treatment involved the giving of rather over 1,500 refills of air. Phrenicectomy was performed where suitable, and in most instances the result was good. The scope of thoracoplasty in Glasgow and the West of Scotland would appear to be small, and no fresh cases can be recorded. That there are patients whose condition would in all probability be greatly ameliorated by thoracoplasty cannot be doubted. A survey of 13 patients who submitted to the operation (which it is hoped to publish in the near future) shows (1) that in the series for tuberculosis there was no primary mortality; (2) that sputum was reduced by at least 60 per cent.; (3) that bacilli in

most cases disappeared soon after operation; and (4) that 7 of the 11 patients discharged are working or could be working.

NON-PULMONARY TUBERCULOSIS.

Since children below 15 years of age are dealt with at Mearns Kirk Hospital this part of the report refers entirely to adolescents and adults.

1. *Tuberculous Lymphadenitis*.—Five patients were treated, of whom 2 were admitted with abscesses and 1 with multiple sinuses. All were eventually fitted for operation, 3 having the glands dissected and being dismissed healed. The remaining 2 refused operation. Beyond reiterating that clean dissection, which is only possible in the absence of marked abscess or sinus formation, is the treatment of choice, there is little to add to previous reports.

2. *Tuberculosis of Spine*.—Twenty-one patients were treated who had suffered from spinal caries, and 14 died, the cause of death being as follows:—Amyloid disease, 7; paraplegia, 2; pulmonary disease, 1; meningitis, 2; and 2 from abscesses infected prior to admission. The 7 deaths due to amyloid disease include 1 in whom a sinus developed during residence in hospital; the others had sinuses on admission. Consolidation operations were practised wherever possible. Four people so treated were dismissed in the course of the year, their average period in hospital from the time of operation being about a year. Of course, as was pointed out previously, the presence of abscesses or sinus formation may contra-indicate the operation. Of the total, 20 were so affected. The average residence was 570 days.

3. *Tuberculosis of the Hip Joint*.—Of the 15 patients treated only 2 were admitted without abscess or sinus. With this fact in view, it will be realised that arthrodesis is only exceptionally possible. Ten people had grossly-infected sinuses on admission; for these conservatism is the only available procedure. Sequestrectomy was done once, tenotomy once, and extra-articular arthrodesis three times, all with excellent results. It can be safely said that arthrodesis gave by far the best results. There were 2 deaths. The drop in average duration from 763 days to 389 days is probably accounted for by the admission and dismissal of a number of patients from whom nothing beyond temporary healing of the sinuses could be achieved.

4. *Tuberculosis of other Bones and Joints.*—Previous reports have dealt fully with the aims of treatment of these lesions, and with the results in general. Deformity is usually slight and function good in smaller bones and joints following conservative treatment. Where lasting stability is essential, excision in one form or another is often advisable, this applying particularly to the knee. Of 15 patients with tuberculosis of the knee, 4 were admitted surgically clean and had the joint excised. The others were treated conservatively by compulsion, having in many instances extensive sinus formation. The average residence was 377 days; this period may be halved for those on whom it was possible to perform excision.

5. *Abdominal Tuberculosis.*—General remedial measures, including moderate use of heliotherapy, remain the mainstay of treatment in this class of lesion. Of the 37 patients treated, 15 were suffering from acute disease, and 6 of these died; 15 had sub-acute disease, and 2 died; and 7 had chronic lesions, resulting in 1 death. The possibility of some of the acutely-diseased abdominal tuberculosis being in reality instances of miliary tuberculosis with preponderance of abdominal symptoms should be kept in mind.

6. *Other Forms of Tuberculosis.*—Fifty-four patients were treated for forms of tuberculosis not included in the previous groups. Of these 16 died. Genito-urinary tuberculosis constitutes the most important sub-group and accounts for 27 patients, including 3 deaths. Most of the others manifested multiple lesions offering little chance of cure.

Non-Tuberculous Cases.—During the year 16 non-tuberculous cases were admitted.

PUERPERAL SEPSIS AND PUERPERAL PYREXIA.

The following report, while more concise than in past years, will be found to follow the lines laid down in previous reports:—

SYNOPSIS OF PATIENTS.

	Total.	Deaths.
Puerperal fever following delivery of a viable child, ...	221	23
Puerperal fever following delivery of a non-viable child, ...	53	10
Instances of altered diagnosis (excl. of abortions), ...	29	5
Abortions (not septic), ...	44	—
Death-rate 1. Sepsis following delivery of a viable child, ...		10·4%
Death-rate 2. Sepsis following delivery of a non-viable child, ...		18·8%
Combined death-rate, ...		12·0%

The fall in the death-rate appears to be due in great measure to a fall in the rate for primiparae from 21 to 12 per cent. The mortality for post-abortum sepsis remains regrettably high. Among complications not due to the actual pregnancy the fall in the fatality rate is chiefly due to a fall in respiratory affections occurring close to term. On figures over the past few year, anæmia and influenza seem to have been more frequently followed by fatal sepsis than any other single complication. Illegitimacy was noted in 22 patients, and multiple pregnancy occurred six times.

PLACE AND TYPE OF DELIVERY.

(Deaths are shown in brackets.)

		Instrumental.	Mortality Percentage.	Spontaneous.	Mortality Percentage.
At home, ...	...	27(6)	22·2	143(8)	5·5
In Institutions, ...	...	9(2)	22·2	42(7)	16·6
Total, ...	...	36(8)	22·2	185(15)	8·1

The 36 instrumental deliveries included 3 by Cæsarean section. All others were delivered by forceps. The following tables show the attendance at birth and the condition and manner of delivery of the placenta:—

<i>Attendance at Birth—</i>						Total.	Deaths.
Doctor alone, ...	...	...	...	...	...	32	1
Doctor and Midwife, ...	...	...	...	...	...	90	12
Midwife alone, ...	...	...	...	...	...	92	8
Handywoman alone, ...	...	...	...	...	...	6	2
No Attention, ...	...	...	...	...	...	1	—
Total, ...	...	...	...	...	...	221	23

CONDITION AND MANNER OF BIRTH OF PLACENTA.

	Spontaneous delivery of child.		Instrumental delivery of child.	
	Total.	Deaths.	Total.	Deaths.
Placenta whole and normal, ...	170	12	21	4
Placenta broken, ...	6	1	5	2
Manually removed, whole or broken, ...	9	2	10	2
Total, ...	185	15	36	8

Vaginal Examination. — The following table deals with vaginal examinations on patients who had no other interference:—

	Total.	Deaths.	Fatality Rate.
No examination or no information, ...	35	3	8·6%
One examination,	60	3	5·0%
Two examinations,	28	3	10·7%
Repeated examinations,	54	4	7·2%
Total,	177	13	

The following table shows (1) the day of onset of illness; (2) the difference in days between onset of illness and hospitalisation; and (3) the duration in days of the primary fever. All are shown separately for spontaneous and operative births, with deaths in italic figures:—

	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-14	-21	21+	Total
1. Spontaneous,	27(5)	23(4)	22	13	20(1)	6	5	14(1)	10(2)	12	13	9(1)	11(1)	185(15)
Operative,	4(1)	7(2)	11(1)	2	1(1)	1	—	1(1)	—	2(1)	3	2(1)	2	36(8)
2. Spontaneous,	19(1)	33(2)	42(4)	23(5)	13	19	8(1)	7	3	3	4(1)	5	6(1)	185(15)
Operative,	2(1)	4(1)	11(2)	5(1)	3(1)	2(1)	1	1	1	—	5(1)	—	1	36(8)
3. Spontaneous,	17(3)	24(1)	20(1)	16(3)	11(1)	10	7(2)	4	5	25	10(1)	17(2)	19(1)	185(15)
Operative,	2(1)	2(1)	4	3(1)	3(1)	7(2)	1(1)	1(1)	1	2	5	2	3	36(8)

The essential lesions may be classified as follows:—

	Spontaneous Delivery.	Died.	Operative Delivery.	Died.
Perineal Sepsis,	6	1	1	—
Vaginitis and Cervicitis,	3	—	1	—
Subinvolution,	5	—	—	—
Retained Infected Products,	2	—	2	—
„ „ Lochia,	54	—	3	—
Septic Endometritis and Metritis,	32	—	7	—
Salpingitis,	8	—	2	—
„ with Local Peritonitis,	9	—	1	—
Pelvic Cellulitis,	12	1	1	—
Pelvic Peritonitis,	9	2	3	1
Phlegmasia, Unilateral,	11	—	1	—
„ Bilateral,	7	1	2	—
Septicæmia	27	10	12	7
Total,	185	15	36	8

Bacteriology.—No detail is given of the cultures taken from infected patients. It is probably sufficient to say that the streptococcus continues to predominate, being found in pure culture in 50 per cent. of the patients. When mixed infections

are included, streptococci can be found in between 60 per cent. and 70 per cent. of the cultures taken. Hæmocultures have not been done during the past year except in cases of unusual interest. As was pointed out last year, little difference in mortality can be made out as between positive and negative cultures.

Abortions.—The total number of abortions dealt with during 1933 was (septic, 53; non-septic, 44), grouped as follows:—

	Non-septic.	Died.	Septic.	Died.
Threatened, ...	1	—	—	—
Inevitable, ...	3	—	8	2
Incomplete, ...	32	—	17	2
Complete, ...	8	—	28	6
Total, ...	44	—	53	10

CLASSIFICATION OF SEPTIC ABORTIONS ON ADMISSION.

	Total.	Died.
Uterine Sepsis, ...	23	—
„ with salpingitis, ...	5	—
„ with peritonitis, ...	9	4
Septicæmias, ...	16	6
Total, ...	53	10

It has been shown that in septic abortions a mixed infection of a streptococcus and bacillus coli is very common. The year 1933 shows no marked difference. In fatal septicæmia and peritonitis a streptococcus often found in pure culture was the responsible organism.

Treatment.—Little can be added to the reports for the previous years. Practically every recognised method of treatment has been given a fair trial and no difference in results can be found. For local infections postural drainage with a soft rubber tube in the uterus has proved perfectly efficient. It may be noted that during 1933 no glycerine instillations were given, the results remaining as before. For peritonitis early drainage by the vaginal or abdominal route offers the most reasonable prospect of recovery when used in conjunction with an antitoxin to bacillus Welchii. Unfortunately the average case of peritonitis has also a septicæmia, and such a case is the most hopeless type likely to be met. While the septicæmia show a lower mortality, those who die are almost hopeless from admission; more from the virulence of the infection than from delay in hospitalisation. In this respect a plea may be put forward for a properly-organised donor service for blood transfusion, which, while it has worked no miracles in our hands in the past, has at least left an impression of usefulness.

PNEUMONIA.

During the year 247 cases were treated, as compared with 291 in 1932. Of these, 155 were broncho-pneumonia in children under ten years of age, with 23 deaths, giving a death-rate of 14·8 per cent. The figure for 1932 was 14·7 per cent. Lobar pneumonia provided 40 cases, with 1 death. The low death-rate in this group is due to the fact that most of these cases occurred in children under 15 years of age, all of whom recovered. Two deaths occurred from meningitis; in 1 instance the pneumococcus and in the other the tubercle bacillus was recovered from the cerebro-spinal fluid. There were 4 cases of empyema as complications of broncho-pneumonia.

DENTAL TREATMENT.

During the year Dr. Hugh M'Kay, L.D.S., made in all 34 visits, and the dental work carried out is as follows:—

Fillings	{ Amalgam,	26
	{ Cement,	17
Extractions with Local Anaesthesia,		290
Extractions with General Anaesthesia,		165
Scaling,		320
Pulpitis Cases,		10
Dressings with Temporary Fillings,		4
Examinations,		200 (approx.)

JOHN WATSON,
Medical Superintendent.

June, 1934.

VERIFIED SEPSIS IN ALL PATIENTS, 1933.
(DEATHS IN RAISED FIGURES.)

Age Group.	Primiparæ.	Multiparæ.	Total.	Duration of Pregnancy.				Complications of all Pregnancies over 28 Weeks.				Number of Deaths.
				Non-viable.		Viable.		Hamorrhage, exclusive of Abortions.	Eclampsia or Albuminuria.	Hyperemesis.	Other.	
				Under 16 Weeks.	Over 16 Weeks and under 28 Weeks.	Born Alive.	Stillborn.					
—15	—	—	—	—	—	—	—	—	—	—	—	—
—20	19 ¹	—	19 ¹	4 ¹	—	14	1	—	—	—	1	1
—25	34 ³	54 ⁵	88 ⁸	7 ²	—	78 ⁶	3	3	7	—	9	8
—30	13 ³	55 ⁴	68 ⁷	12 ²	3 ¹	50 ⁴	3	1	3	5	14 ²	7
—35	5 ²	49 ⁵	54 ⁷	10 ¹	7 ¹	36 ⁵	1	4	5 ¹	—	12 ¹	7
—40	2	34 ⁷	36 ⁷	8 ¹	1 ¹	26 ⁵	1	1 ¹	3 ²	1	5 ¹	7
—45	—	9 ³	9 ³	1	—	8 ³	—	—	2 ²	—	—	3
—50	—	—	—	—	—	—	—	—	—	—	—	—
Total	73 ⁹	201 ²⁴	274 ³³	42 ⁷	11 ³	212 ²³	9	9 ¹	20 ⁵	6	41 ⁴	33

MEARNSKIRK HOSPITAL.

The stabilisation of the hospital routine is reflected to some extent in the greater number of patients admitted and dismissed during 1933 as compared with previous years. The increase is shown in the following table:—

PATIENTS ADMITTED AND DISMISSED, 1930-1933.

Year.		Admitted.	Dismissed.	In Residence at 31st December.
1930,	... ..	385	76	309
1931,	... ..	444	275	478
1932,	... ..	430	407	501
1933,	... ..	463	463	501
Total,	... ..	1,722	1,221	

The conditions treated were of three main types, namely:— (1) non-pulmonary tuberculosis; (2) pulmonary conditions—tuberculous or non-tuberculous; and (3) orthopædic conditions. The relative numbers of patients in these groups were as follows:—

		Admitted.	Dismissed.
(1) Non-Pulmonary Tuberculosis,	... ..	288	314
(2) Pulmonary Conditions,	... ..	116	95
(3) Orthopædic Conditions,	... ..	59	54
Total,	... ..	463	463

The following report deals with the patients who were dismissed or died in hospital during the year. The total of 463 includes 34 deaths (7·4 per cent.), 14 irregular dismissals, and 3 cases transferred to other hospitals. On dismissal, 309 patients (66·7 per cent.) were healed, while 91 were much improved and 16 improved. The average duration of residence was 352 days.

In the table appended a further analysis is given showing the age and sex distribution, the location of the disease, and the general and local condition on admission and on dismissal.

In the section dealing with non-pulmonary tuberculosis the classification is made on a regional basis, all patients with symptoms or signs referred to a given region being grouped together irrespective of the ultimate diagnosis. Cases in which no tuberculosis was found are then set aside with the hospital diagnosis attached, and the tuberculous cases are dealt with in greater detail. The total numbers of patients to be considered in the main sub-divisions of the three groups already mentioned are as follows:—

1. *Non-Pulmonary Tuberculosis*. — Abdominal tuberculosis, 110; bone and joint tuberculosis, 159; glandular tuberculosis, 27; other forms, 18; total, 314.

2. *Pulmonary Conditions*—(a) *Tuberculous*.—Pleurisy, 13; hilum adenitis, 12; intra-pulmonary disease, 49; total, 74.

(b) *Non-Tuberculous*. — Post-pneumonic conditions, 11; other conditions, 10; total, 21.

3. *Orthopædic Conditions*.—(a) congenital deformities, 10; (b) rickets, 19; (c) infantile paralysis, 14; and (d) other conditions, 11; total, 54.

1. NON-PULMONARY TUBERCULOSIS.

A. *Abdominal Tuberculosis*. — There were 110 patients dismissed who had been admitted to hospital with, or suspected of having, abdominal tuberculosis. In 44 cases no positive manifestation of active tuberculosis appeared during their stay in hospital. All of these, however, required institutional treatment. Eighteen of them suffered from well-defined conditions, as follows:—7 cases of rickets, 3 cases of chronic appendicitis, 2 cases of enteritis, and single cases of hilum adenitis, chronic bronchitis, sprue, Hirschsprung's disease, salpingitis with post-operative peritonitis, and rheumatism. In the other 26 cases the poor general condition present on admission was apparently due to malnutrition, and rapid improvement took place under the hospital regime.

Among the 66 cases with definite abdominal tuberculosis the condition, as in 1932, was usually of a mild type. There were, however, 10 deaths (15 per cent.), all of which occurred in patients who had advanced disease on admission. Of these, 7 had active pulmonary disease in addition to the abdominal lesion, and this extra factor contributed in varying degrees to the fatal results. Three patients developed meningitis as a terminal complication. The deaths occurred to a large extent in the lower age-groups, 6 occurring in children under 5 years of age, 5 of these being infants under 2 years. In addition to the deaths in the tuberculous group, the patient with salpingitis and post-operative peritonitis died after the development of a faecal fistula.

The nature of the tuberculous lesions present was classified according to clinical and operative findings, as follows:—*Tabes mesenterica*, 29; tuberculous peritonitis, 8; tuberculous peritonitis, with ascites, 16; tuberculous peritonitis, with enteritis, 4; caseating abdominal tuberculosis, 8; ileo-cæcal tuberculosis, 1; total, 66. The disease was acute in 34 cases, sub-acute in 10, and chronic in 22. Six patients were suffering

from a recurrence of activity in the abdominal lesion. In 26 there was a family history of tuberculosis. The tuberculin test (Mantoux) was positive in 55 and negative in 8. In 5 the test was not carried out.

Operation was required in the tuberculous patients in 3 cases. In 1 the ilio-caecal portion of the bowel was resected and an anastomosis performed, in 1 case with obstruction of the portal circulation, due to enlarged glands at the porta hepatis a laparotomy with drainage was performed, and in 1 the appendix was removed after the development of acute appendicitis. In addition, paracentesis abdominis was required in 5 cases. Among the non-tuberculous cases appendicectomy was required in 2 cases, and in the patient with Hirschsprung's disease a presacral sympathectomy was performed with a very beneficial result. The average duration of residence for the abdominal cases was 177 days, or about 6 months.

B. BONE AND JOINT TUBERCULOSIS.

1. *Tuberculosis of the Spine.*—Among the 44 cases in this group there were 10 in which no evidence of spinal disease could be demonstrated. In 5 of these abscesses of slow development appeared in proximity to the spine (2 perinephric, 1 cervico-dorsal, 1 lumbar, and 1 ischio-rectal), but no disease was present in the spinal column. In 2 further cases cervical adenitis was the ultimate diagnosis. One of these latter cases had a deformity simulating torticollis. In 1 case there was spastic paraplegia due to a lesion of the cord, and in the final 2 cases no disease was found in the spine, but both were suffering from abdominal tuberculosis (tuberculous peritonitis and tabes mesenterica).

There were 34 cases with definite spinal caries. The age at the onset of the disease varied from 1 to 14 years, the average being $4\frac{1}{2}$ years. The disease began in the first 5 years of life in 23 cases (68 per cent.) and in the first 3 years of life in 15 cases (44 per cent.). In 9 cases there was a history of tuberculosis in the family, 16 gave a history of antecedent injury, and the tuberculin test (Mantoux) was positive in all 34 cases. The regions of the spine affected were as follows:—Mid-cervical, 1; cervico-dorsal, 1; high dorsal, 1; mid-dorsal, 2; low dorsal, 10; dorso-lumbar, 5; high lumbar, 1; mid-lumbar, 5; low lumbar, 7; and lumbo-sacral, 1; total, 34. Deformity was present in 33 cases on admission. In 1 case where the disease affected the 5th lumbar and 1st sacral vertebrae there was no visible deformity. Slight kyphosis was apparent in 19 cases, a moderate degree of deformation had occurred in 7, while in 7 there was gross deformity. On dismissal the deformity had been corrected in 1 case, definite improvement had occurred in 5 cases, while in the remaining 27 cases there was no direct improvement in the kyphosis, although compensatory curves had

been produced. Abscess formation occurred in 18 cases (53 per cent.) and went on to sinus formation in 5 (15 per cent.).

Evidence of involvement of the cord was observed in 19 cases (55 per cent.), a definite paraplegia being present in 2, both of which had lower dorsal lesions. The others showed slight spasticity or exaggerated reflexes in the lower extremities. The lesion was in the dorsal region in 11 of these.

The patients were admitted at different stages of the disease. Seven were classified as early cases. In these the duration of the disease on admission varied from 5 weeks to 7 months, with an average duration of 4 months. In 3 intermediate cases there was an average duration of 13 months, while in the largest group of 23 cases the disease was in an advanced stage, having been present from 2 to 10 years, with an average duration of $4\frac{1}{2}$ years. The latter group (advanced cases) included 4 cases with recurrence of activity and 1 case with recurrence of symptoms, referred pains in the lower limbs due to pressure on nerve roots by the calcified remains of an old abscess. Three of these 5 cases had had two previous periods of hospital treatment. A sixth case was readmitted for investigation regarding the advisability of further spinal support. Nineteen of the advanced cases, including 2 of the above, were transferred from other institutions where they had received lengthy periods of treatment. The 10 cases admitted in the earlier stages of the disease received a full course of hospital treatment at Mearns-kirk. Their average duration of residence was 868 days (2 years 4 months), as compared with 720 days for the whole group. Two deaths occurred, 1 in a recurrent case of low resistance where abscess lead to sinus formation and amyloid disease. The other was an early case with abscess and sinus formation in which the sacro-iliac and hip joints became involved, and the patient died from toxæmia. All other cases received the necessary treatment, and were dismissed well with the disease arrested. Sixty-five plaster of Paris appliances were made, and 31 cases were fitted with certalmid jackets on dismissal.

2. TUBERCULOSIS OF BONES OTHER THAN VERTEBRÆ.

Tuberculosis of the long bones of the hands and feet occurred in 14 cases. The majority of these patients were children under 5 years of age. While dactylitis is commonly regarded as a minor tuberculous lesion, it should be remembered that healing is slow and that these patients may occupy hospital beds for considerable periods. In this group the average duration of residence was 567 days. Further, the condition, like all forms of bone and joint tuberculosis, is a secondary one, and the existence of an internal focus of infection must be taken into account. In 1 case in this series with an obvious abdominal

lesion death followed the development of tuberculous meningitis. The others were dismissed healed. Sinus formation occurred in 12 cases (85 per cent.). In 9 of these the sinuses required scraping under general anæsthesia. Amputation of a digit became necessary in 2 cases. Appliances were supplied in 11 cases.

Tuberculosis of other bones was suspected in 11 cases. In 2, however, the final diagnosis was syphilitic osteitis and ganglion. In the remaining 9 the ribs were affected in 5, the skull bones in 3 (mastoid, frontal, and occipital), and the tibia in 1. Sinuses occurred in 6 of these and required scraping under anæsthesia in 5. One case was dismissed irregularly, and the others were dismissed healed after an average residence of 205 days.

3. TUBERCULOSIS OF THE HIP JOINT.

There were 32 patients who had been admitted with disease in the region of the hip. Tuberculosis of the hip joint was found in 22 of them, while in the remaining 10 cases the final diagnosis was traumatic synovitis, 3; Perthe's disease, 2; pneumococcal arthritis, 1; rheumatic arthritis, 1; syphilitic arthritis, 1; Pott's disease, with multiple sinuses, 1; and acute inguinal adenitis, with abscess, 1. The tuberculous cases were arranged as follows:—A. *Old Cases*.—(1) transferred in more or less advanced stages of treatment, 13; (2) readmitted with recurrence of (a) activity, 1; (b) deformity, 2. B. *Recent Cases*.—(1) intra-articular lesions, 4; (2) extra-articular lesions (femoral neck and trochanter), 2. In the old cases the duration of the disease varied from 15 months to 10 years, with an average duration of almost 5 years (58 months). Of the recent cases only 1 was admitted to hospital in less than six months from the onset of the disease, the average duration on admission being $5\frac{1}{2}$ months (22 weeks). The average age at the onset of the disease was $4\frac{1}{2}$ years, the greatest number (38 per cent.) beginning in the second and third years of life. There was a family history of tuberculosis in 4 cases only. A history of previous injury was obtained in 13 cases, but this was a point of doubtful importance. The tuberculin test (Mantoux) was positive in every case subjected to it (21). The right hip was the seat of the disease in 17 cases, while the left was affected in 5 only. Sinuses were present (open or healed) in 9 cases on admission, and developed during residence in 3, i.e., abscess formation occurred at some time in the course of the disease in over 50 per cent.

With regard to the mobility of the joint, this was absent in 11 of the old cases, very limited in 3, and free in 2 where the head and neck of the femur were completely destroyed and the joint was flail-like. In the recent cases movement was

absent in 3 and limited in 1 of the intra-articular cases, while it was free in the 2 patients with extra-articular disease. Operation was required in 8 cases as follows:—Trochanteric osteotomy and tenotomy of the adductors, 5; tenotomy of the adductors alone, 1; arthrodesis (Hibb's), 1; and arthrotomy, with sequestrectomy, 1. Sinuses were scraped under general anaesthesia in 4 cases, and in 1 case in which multiple urinary calculi had developed cystotomy and later nephrotomy were performed for their removal. One of the early intra-articular cases (age 2) admitted with a sequestrum in the femur and a foul discharging sinus died as a result of acute secondary infection and general toxæmia. The patient with Pott's disease, who was admitted with grossly-infected gluteal, iliac, and thigh sinuses, died after developing amyloid disease. Two patients were transferred to other hospitals. The remaining 19 cases were dismissed with the disease healed and the affected limb in good position. A certalmid hip spica, patten, and crutches were supplied in 18 cases. In addition, 4 certalmid spicæ and crutches and one walking caliper splint were supplied to non-tuberculous cases. The average duration of residence in hospital for the whole group was 737 days, as against 1,083 days for the three early intra-articular cases treated from start to finish.

4. TUBERCULOSIS OF THE KNEE.

In this group there were 29 cases. In 7 of these no tuberculosis was found, the lesion complained of being traumatic in origin in 3, syphilitic in 2, and rheumatic in 1. In the remaining case the condition was diagnosed as hæmophilia, with recurrent hæmarthroses. In the 22 proved tuberculous cases the disease was recurrent in 10 (45 per cent.), and of these 4 had been in hospital on 3 previous occasions and 2 had had 2 previous courses of treatment.

The right and left knees were affected with equal frequency. In the majority (68 per cent.), the disease began in the synovial membrane. It spread from that site to the articular cartilages of the femur and tibia in 46 per cent. and remained localised in the synovial membrane in 22 per cent. There was an osseous origin in the femur in 32 per cent., the disease beginning in the epiphysis (definitely localised to internal or external condyle) in all but one case where the site of origin was in the metaphysis, with an associated periostitis on the polital surface of the femur. In this case the epiphysis was ultimately involved by direct spread through the epiphyseal cartilage. The average age at the onset of the disease was at $4\frac{3}{4}$ years. On admission 9 cases were classified as early, with an average duration of $2\frac{1}{2}$ months; 4 cases were intermediate, with an average duration of 2 years; while 9 were advanced, with an average duration of

6 years. Three of the advanced cases were transferred from other institutions. Abscess formation took place in 3 cases, while sinuses were present in a further series of 5 cases, i.e., abscesses had occurred in 36 per cent. The joint was excised in 9 patients where there had been erosion of the articular surfaces. Firm ankylosis was secured in every case. In 1 patient a sequestrum was removed from the metaphysis of the femur.

There was 1 death in a boy with early synovial disease, who developed tuberculous meningitis. One patient was dismissed irregularly. The others were dismissed in walking caliper splints, with the disease healed in 16 cases and much improved in 4. In 10 cases there was useful mobility of the the joint, while in 10 the joint was immobile, osseous ankylosis being present in 9 of these.

The average duration of residence in hospital was 573 days.

5. TUBERCULOSIS OF THE ANKLE AND TARSUS.

In the group of 17 patients admitted with disease in the ankle region tuberculosis was present in 15, with the following distribution:—Ankle joint (arthritis), 7; tarsal bones (os calcis), 1; tarsal joints, 3; bones of leg, 4.

The diagnosis was altered in 2 cases, as follows:—Kohler's disease (bilateral), 1; and os tibiale externum, with pes planus, 1. Two patients developed other major lesions, from which they died. In 1 of these active pulmonary disease was followed by tuberculosis of the hip, spinal caries, and finally tuberculous meningitis. In the other pulmonary complications, spinal caries, and tuberculous meningitis led to death. All the other patients were dismissed with the disease arrested after an average residence of 503 days. Certalmid splints were supplied to 11 patients. In all the ankle cases, except 1, where osseous union had occurred, there was a useful degree of movement at the joint on dismissal.

6. TUBERCULOSIS OF OTHER JOINTS.

There were 12 patients in this group. The disease affected the elbow joint in 7 cases, the shoulder in 1, the wrist in 1, and the sacro-iliac joint in 1. Two other patients suspected of having sacro-iliac disease showed no evidence of tuberculosis during their residence. In the elbow-joint cases the disease remained localised to the synovial membrane in 2. Both of these

patients were admitted to hospital within 1 month of the onset of the disease. In the other 5 cases arthritis was present, the average duration of the disease on admission being $2\frac{1}{4}$ years. In 2 of these there was a recurrence of activity after previous hospital treatment. The humerus and ulna were involved in all 5 cases and the radius in 3. All patients were dismissed healed and in splints after an average residence of 476 days. In the shoulder-joint case the disease took the form of caries sicca, and the patient was dismissed healed in a supporting splint after 385 days' residence. In the wrist case there was no osseous lesion, the disease being of the nature of a teno-synovitis. Abscess and sinus formation occurred, but the patient was dismissed healed, with free movement at the joint, after 264 days in hospital. The case of sacro-iliac joint disease developed an abscess which was incised, and the patient was dismissed well after 408 days.

C. TUBERCULOSIS OF CERVICAL GLANDS.

Among 27 patients admitted with a diagnosis of tuberculous lymphadenitis 3 had non-tuberculous glandular lesions, which healed rapidly, and a fourth patient, who had previously been in hospital with cervical adenitis, was readmitted with tuberculous epididymitis and widespread involvement of the genito-urinary tract, from which he ultimately died in spite of tuberculin treatment.

The remaining 23 patients all did very well and were dismissed healed. Abscess formation occurred in 10 and sinuses were present on admission (12) or developed during residence (4) in 16 cases. Abscesses required aspiration in 5 cases, and were incised after involvement of the skin in 6 cases. Sinuses were scraped under general anaesthesia in 4 cases, and gland masses were removed by operation in 6 cases. The tuberculin test (Mantoux) was positive in 21, negative in 1, and not done in 1. The disease was advanced (1-8 years) on admission in 13 cases and of recent origin (under 4 months) in 8. Previous hospital treatment had been given in 5 cases. The average duration of residence was 281 days.

D. OTHER FORMS OF NON-PULMONARY TUBERCULOSIS.

In this group there were 18 cases. In 6 of these the disease affected the skin and subcutaneous tissues, in 1 there was tuberculosis of the genito-urinary tract, 1 suffered from tuberculous keratitis, and 1 patient was admitted in a moribund condition with tuberculous meningitis. Multiple lesions were present in 9 patients. This latter group included only patients with several

tuberculous foci, none of which could be regarded as the major lesion. Where a major lesion existed and there were in addition other lesions of secondary importance the patient was classified under the major condition. Actually 60 patients classified in the foregoing groups had tuberculous lesions other than the one specified, that is 69 of the 234 patients with proved surgical tuberculosis had more than one lesion. This gives a percentage figure of 29.

Three deaths occurred in the group under consideration. One in the patient admitted with tuberculous meningitis and 2 in cases with multiple lesions, 1 of which developed amyloid disease and the other tuberculous meningitis. Two patients were dismissed irregularly, and the remaining 13 were dismissed healed after an average residence of 375 days.

2. PULMONARY CONDITIONS.

In contrast with previous years, the majority of the patients in this group were sufferers from pulmonary tuberculosis. There were 95 cases in all. Of these, 74 were tuberculous and 21 were non-tuberculous.

A. Tuberculous Group.—Four well-defined types of the disease were represented as follows:—Pleurisy, 13 cases; hilum adenitis, 12 cases; unilateral intra-pulmonary tuberculosis, 21 cases; and bilateral intra-pulmonary tuberculosis, 28 cases. The majority of these patients were children under 15 years of age, but during the year a departure from the former practice of the hospital was made by the admission of a number of adult female patients. Most of these were transferred from the sanatorium at Bridge of Weir. The group under consideration includes 18 patients over 15 years of age, of whom 15 were over 20 years. Treatment was carried out along the usual lines, a strict sanatorium regime being observed. Crisalbine (May & Baker) given intravenously was used with benefit in a series of 8 selected cases. It had the effect of reducing the number of tubercle bacilli in the sputum as well as generally mitigating the severity of the disease. The intra-muscular form of this preparation (myocrysine) was also brought into use, but its value as a therapeutic agent has not yet been finally assessed. Eight unilateral cases received great benefit from the induction of artificial pneumothorax. For this treatment a very convenient form of pneumothorax apparatus, easily transportable and fitted to a specially-adapted carriage, was constructed in the hospital. During convalescence 16 cases had courses of graduated exercises. Tuberculous complications occurred in 18 cases. In 8 abdominal lesions appeared, tuberculosis of bones or joints

occurred in 8 cases, while in 2 single cases the cervical glands and the soft tissues of the legs were affected. In no case was the larynx involved.

There were 4 irregular dismissals and 11 deaths. The majority of the deaths occurred in the age-group 11-15 years. Broncho-pneumonic phthisis (complicated by tuberculous meningitis in 1 case) was the cause of death in 8 cases. There was 1 death from miliary tuberculosis, 1 from tuberculous meningitis in a patient with a massive unilateral infection, and 1 in a case of bilateral tuberculosis of the adult type, complicated by tuberculosis of the abdomen. In the remaining 59 patients the disease was healed or quiescent on dismissal.

B. Non-Tuberculous Group.—The patients coming under this heading were subdivided into those with post-pneumonic conditions, of which there were 11, and those with "other" conditions, of which there were 10. The latter group included the following conditions:—Bronchitis, 2; bronchiectasis, 3; empyema, 1; mediastinal dermoid, 1; and debility, 3. The 3 latter cases were admitted for observation, but no evidence of disease was found. The patients all benefited from the general open-air treatment for which the hospital is so well adapted. In addition, graduated respiratory and other exercises were given. While the benefit received from hospitalisation was very noticeable during residence and on dismissal, it was doubtful if this would be of a lasting nature, particularly in those patients who had to return to live under totally unsuitable home conditions.

3. ORTHOPÆDIC CONDITIONS.

The treatment of orthopædic conditions was continued and the scope of the work extended during the year. Fifty-four cases were dismissed, as compared with 37 last year. In addition to cases admitted through the Education Health Service, several patients were admitted who had suffered from anterior poliomyelitis during the minor epidemic of July, 1933, and who had received treatment during the acute phase of the disease at Ruchill Hospital or elsewhere. Physical treatment during the second stage of poliomyelitis is of the greatest value in restoring muscle power and preventing the development of deformity. To carry out this work satisfactorily a small gymnasium was equipped (all appliances being constructed in the hospital), and the necessary electro-therapeutic apparatus was installed. This valuable addition to the physio-therapeutic department was available for all orthopædic cases.

As in previous years, co-operation with the Education Health Service was continued, and weekly visits to the Willowbank Orthopædic Clinic were made by the surgeon. The after-care of the dismissed patients was thus ensured, and suitable cases were selected for admission to hospital. The splint repair service at the clinic was, as formerly, available for tuberculous patients as well as for those with other orthopædic conditions. The work of the clinic has already been described in the Report on the Medical Inspection and Treatment of School Children for the year ended 31st July, 1933. With regard to the patients who completed their course of hospital treatment and were dismissed during the year the deformity complained of was slight in 2 cases, moderate in degree in 23, and of a gross nature in 29. The cause of the deformity was rickets in 19 cases, infantile paralysis in 14 cases, and congenital in 11, while there were 10 miscellaneous conditions. The nature of the deformities treated were as follows:—*Rickets*.—Genu valgum, 8 cases; genu varum, 2 cases; curvatures of the tibia, 5 cases; coxa vara, 1 case; scoliosis, 1 case; and acute rickets, 2 cases. *Infantile Paralysis*.—Flail foot and knee, 4 cases; flail foot, 2 cases; T. equino-varus, 2 cases; T. equino-valgus, 1 case; T. equinus, 1 case; T. equinus, with cavus, 1 case; T. calcaneus, 1 case; T. calcaneo-cavus, 1 case; and T. varus and quadriceps paralysis, 1 case. *Congenital Deformities*.—Torticollis, 5 cases; T. equino-varus, 1 case; spina bifida, 2 cases; T. equino-cavus, 2 cases; absence of head and neck of femur, 1 case. *Other Conditions*.—Fixed flexion deformity of the knee joint, 4 cases; spastic paralysis, 2 cases; pes planus, 2 cases; hallux valgus, 1 case, and outstanding auricles, 1 case. Operative treatment was required in 43 cases, and 26 patients had more than one operation. Five cases required manipulation and fixation only. Plaster appliances were necessary in 41 cases, 138 plasters being made. More permanent splints were supplied in 12 cases, as follows:—Walking calipers, 6; external leg irons, 4; certalmid leg splint, 1; aluminium toe splints, 1. In 16 cases special boots were fitted. Physical treatment, consisting mainly of massage and exercises, was given in 45 cases by the hospital staff of masseuses.

Six cases, including 2 cases of acute rickets and 2 cases irregularly dismissed, had general treatment only. On dismissal the deformity was corrected in 13 cases, much improved in 30, improved in 8, and not improved in 3. The latter figure included the 2 cases dismissed irregularly. The average duration of residence was 167 days, as compared with 212 days in last year's group. The tuberculin test (Mantoux) was carried out in these cases for purposes of comparison with the tuberculous cases. The test gave a positive result in 32 cases. It was negative in 19 and not done in 3.

The following table is given to show the nature and extent of the operative treatment required for the alleviation of the deformities complained of:—

RICKETS—

Supracondylar Osteotomy of Femur,	6
Cuneiform Osteotomy of the Tibia,	24
Subtrochanteric Osteotomy of Femur,	2
Manipulation after Operation,	5
Manipulation and Plaster (Abbott's Jacket),	1
	<hr/> 38

INFANTILE PARALYSIS—

Stabilisation of Foot,	11
Arthrodesis of Knee,	3
Tendon Lengthening,	3
Tendon Shortening,	1
Muscle Transplantation,	2
Arthrodesis of Mid-tarsal Joint,	1
Jones's Operation,	1
Steindler's Operation,	2
Manipulation with Wrench,	1
	<hr/> 25

CONGENITAL CONDITIONS—

Subcutaneous Tenotomy (sterno-mastoid),	5
Tendon Lengthening (Tendo Achilles),	3
Cuneiform Osteotomy of Tarsus,	1
Muscle Transplantation,	1
Steindler's Operation,	1
Amputation of Toe,	1
Manipulation with Wrench,	1
	<hr/> 13

OTHER CONDITIONS—

Cuneiform Excision of Knee,	6
Cuneiform Excision of Ankle,	1
Supracondylar Osteotomy,	2
Tenotomy (Biceps Femoris),	1
Osteotomy (1st Metatarsal),	1
Arthrotomy of Knee,	1
Ruttin's Operation,	2
Manipulation with Wrench,	6
	<hr/> 20
Total,	<hr/> 96

TREATMENT.

The treatment of the pulmonary and general orthopædic conditions has already been discussed. In all forms of non-pulmonary tuberculosis the treatment given was mainly conservative. This is the form of treatment most generally applicable in children. Exposure to the sunshine and to the

atmosphere did much to improve the muscle tone and to increase the patient's power of resistance. Immobilisation of joints was secured mainly by external splintage and the use of our combined spinal and hip carriage led to many very satisfactory results. In the later stages of the treatment of bone and joint cases plaster appliances were used, and after healing had occurred certalmid or metal and leather supporting splints were fitted. Operative treatment was reserved for the removal of localised foci of disease, correction of deformity, fusion of joints, and the cleaning up of the diseased area in cases with discharging sinuses or ulcers. Abscesses were treated by aspiration and non-infected sinuses by the injection of Calot's or Beck's paste.

Plaster of Paris Work.—The work done in the plaster room during the year consisted of the making of 381 plaster appliances and 106 casts. The plaster appliances included 126 hip spicæ, 139 knee and ankle plasters, 57 jackets, 11 fillets, 19 double hip spicæ, 15 bi-valved appliances, 9 shells, and 5 arm splints. The casts on which certalmid or celluloid splints were constructed included 34 hip spicæ, 29 jackets, 9 fillets, 22 ankle casts, 11 elbow and hand casts, and 1 shoulder cast. In addition to these 4 plaster models of deformities were made. The majority of the plaster appliances were for cases of bone and joint tuberculosis.

Splint Work.—The work done by the splint makers during the year was as follows:—30 new spinal carriages were made, bringing the total number available up to 100. Of the older carriages, 20 were reconditioned and brought up to date (welding, &c.). Many fittings were made for the carriages, 85 certalmid splints, 12 celluloid splints, 37 walking caliper splints, and 4 pairs of external leg irons were supplied to ambulant cases. For bed patients 11 wooden posterior splints, 2 bed Thomas's splints, and 57 other splints were made. The 15 bi-valved plasters and 9 shells already mentioned were finished, lacing hooks and straps being fitted as required. In order to allow patients to walk on plaster splints 22 leather sandals were supplied. Boots were raised on pattens in 43 cases and on wooden, cork, or leather soles in 41 cases. Thirty pairs of crutches were padded and 5 walking trolleys were constructed. Much time was spent on repair work, 290 minor repairs being effected. As in previous years, one splintmaker gave an afternoon each week to splint repair work and alteration of boots at the Willowbank Orthopædic Clinic.

Operative Treatment.—During the year 302 operations or manipulations were carried out under general anæsthesia. The majority of these were undertaken for the treatment of bone and

joint tuberculosis or orthopaedic conditions. The total, which included 141 major surgical procedures, was made up as follows:—

BONE AND JOINT TUBERCULOSIS—

Arthrodesis of Hip,	9	
Arthrodesis of Knee,	11	
Tenotomy of adductors of Hip,	7	
Trochanteric Osteotomy,	2	
Arthrotomy,	3	
Synovectomy,	1	
Disarticulation at Hip,	2	
Amputation of leg above Knee,	2	
Re-amputation of Leg,	1	
Amputation of Digits,	4	
Sequestrectomy,	14	
Incision of Abscesses,	15	
Scraping of Sinuses,	53	
	<hr/>	124

GLANDULAR TUBERCULOSIS—

Excision of Glands,	13	
Incision of Abscesses,	10	
Scraping of Sinuses,	39	
	<hr/>	62

ABDOMINAL CONDITIONS—

Appendicectomy,	2	
Laparotomy,	1	
Presacral Sympathectomy,	1	
	<hr/>	4

GENITO-URINARY CONDITIONS—

Circumcision,	3	
Nephrotomy,	2	
Suprapubic Cystotomy,	1	
Cystoscopic Examinations,	4	
	<hr/>	10

ORTHOPAEDIC CONDITIONS—

Naughton-Dunn's Operation,	17	
Jones's Operation,	3	
Steindler's Operation,	2	
Osteotomy,	17	
Arthrodesis of Hip,	1	
Arthrodesis of Knee,	8	
Tenotomy,	12	
Reduction of dislocated Hip,	3	
Tendon Transplantation,	1	
Excision of Ganglion,	2	
	<hr/>	66

MISCELLANEOUS CONDITIONS—

Radical Mastoid Operation,	2	
Tonsillectomy,	10	
Ruttin's Operation,	1	
Resection of Ribs,	1	
Incision of Bursa,	2	
Manipulations,	14	
Dressings under Anæsthesia,	6	
	<hr/>	36

In addition to these, the theatre staff undertook the care of many minor conditions such as wounds, septic fingers, burns, sebaceous cysts, &c., and in connection with their treatment carried out 1,240 surgical dressings.

Dental Treatment.—The teeth in all cases were examined on admission and treatment was given where necessary. Miss Gentles, L.D.S., visited the hospital weekly and carried out 416 extractions, general anæsthesia being required in 121 of these. Other extractions were undertaken by the medical staff.

Radiology.—During the year 1,237 patients were X-rayed, 2,050 skiagrams being taken. In addition, 63 screen examinations were made. The visiting radiologist, Dr. F. L. Henderson, conducted 52 sessions and the hospital staff undertook 62.

Laboratory.—During the year 796 pathological specimens were investigated in the laboratory. The majority of the specimens were examined for the presence of the tubercle bacillus.

Education.—The average number of children on the school register was 232. They received instruction in the subjects of the ordinary day-school curriculum, a speciality being made of handicraft work. As the ages of the children in the pavilions varied between 6 years and 15 years teaching was to a large extent individual.

TABLE SHOWING CASES DISMISSED OR DIED IN HOSPITAL DURING THE YEAR 1933 WITH AGE AND SEX DISTRIBUTION, LOCATION OF DISEASE, CONDITION ON ADMISSION AND ON DISMISSAL AND AVERAGE DURATION OF RESIDENCE.

Distribution of Disease.	Age and Sex Distribution.				Condition on Admission.				Condition on Dismissal.												Average Duration of Residence (Days)																
	Males.		Females.		General.		Local.		General.						Local.																						
	Years.		Total		Years.		Total		Good.		Fair.		Poor.		Very Good.		Good.		Fair.			Poor.		Transferred.		Irregularly Dismissed.		Died.		Not Improved.		Improved.		Much Improved.		Healed.	
	-1	5-10	-15	+15	-1	5-10	-15	+15	Good.	Fair.	Poor.	Very Poor.	Moribund.	Early.	Intermediate.	Advanced.	Healed (Def.)	Very Good.	Good.	Fair.		Poor.	Transferred.	Irregularly Dismissed.	Died.	Not Improved.	Improved.	Much Improved.	Healed.								
Abdomen,	1	16	25	22	1	65	—	8	18	17	2	45	110	—	25	51	31	3	51	20	39	—	82	10	2	—	—	—	—	—	—	—	—	92	177	
Spine,	5	13	7	—	25	—	4	6	8	1	19	44	4	22	13	5	—	13	5	25	1	32	9	1	—	—	—	—	—	—	—	—	42	720	
Dactylitis,	1	2	1	1	5	—	7	1	1	—	9	14	—	9	5	—	—	4	6	4	—	13	—	—	—	—	—	—	—	—	—	—	12	567	
Other Bones,	—	1	3	3	7	—	1	2	1	—	4	11	—	5	5	1	—	5	3	3	—	9	1	—	—	—	—	—	—	—	—	—	10	205	
Hip,	—	1	9	2	1	13	—	2	10	7	—	19	32	—	20	9	3	—	8	10	11	3	22	6	—	—	—	—	—	—	—	—	28	737	
Knee,	—	2	7	5	1	15	—	3	6	4	1	14	29	1	18	9	1	—	12	6	11	—	23	4	—	—	—	—	—	—	—	—	23	573	
Ankle and Tarsus,	—	5	1	4	—	10	—	3	1	2	1	7	17	1	11	5	—	—	2	10	5	—	15	—	—	—	—	—	—	—	—	—	15	503	
Sacro-iliac,	—	—	—	2	—	—	—	—	—	—	—	1	3	—	3	—	—	—	2	1	—	—	1	2	—	—	—	—	—	—	—	—	3	196	
Shoulder,	—	—	—	—	—	—	—	—	1	—	—	1	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	385	
Elbow,	—	—	1	2	—	3	—	2	—	2	—	4	7	—	3	1	3	—	2	3	2	—	6	1	—	—	—	—	—	—	—	—	—	7	476
Wrist and Carpus,	—	—	—	1	—	1	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	264	
Other Joints,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Cervical Glands,	—	3	5	4	—	12	—	5	7	3	—	15	27	2	9	15	1	—	12	2	13	—	11	14	1	—	—	—	—	—	—	—	—	—	—
Skin and Subcutaneous,	—	1	—	1	—	2	—	—	4	—	4	6	—	4	2	—	—	3	1	2	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—
Genito-Urinary,	—	—	—	1	—	1	—	—	—	—	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Multiple,	—	2	1	1	—	4	1	2	1	—	1	5	9	—	4	2	3	—	3	1	5	—	7	—	—	—	—	—	—	—	—	—	—	—	—
Other,	—	—	2	—	—	2	—	—	—	—	—	2	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Pulmonary,	1	10	17	13	—	41	—	9	12	15	18	54	95	8	43	24	20	—	54	26	13	2	66	11	3	—	—	—	—	—	—	—	—	—	—
Orthopaedic,	—	—	13	19	—	32	—	—	12	9	1	22	54	8	31	12	3	—	2	23	29	—	41	11	—	—	—	—	—	—	—	—	—	—	—
Total,	3	48	98	88	3	240	1	46	77	74	25	223	463	24	210	154	71	4	175	118	164	6	336	69	7	—	3	14	34	47	16	91	309	352	

BELLEFIELD SANATORIUM.

A slight increase in number of patients discharged from this Sanatorium during year ending 31st December, 1933, falls to be recorded. One hundred and eighty-two patients were discharged, as against 160 in 1932. Beds additional to the specified number were in use over a period in order to provide necessary extra accommodation.

Tables drawn up on lines similar to those submitted for former years show cases classified as "Early," "Intermediate," and "Advanced." Thirty-eight cases were considered to be "Early" in their manifestations of the disease. The complete arrest of the disease in most of this group is a definite possibility. The protracted period of treatment thought to be necessary, however, becomes irksome for most, so that active disease may recur subsequent to treatment.

The type of case dealt with continues to be in the main "Intermediate." One hundred and twenty-three have been so classified, evidence of definite extensive disease of both lungs of varying degrees of activity being always demonstrable. Such cases do not readily lend themselves to active methods of treatment, though a fair measure of success has followed the use of artificial pneumothorax in selected cases. Forty-eight of those in this group were discharged home unfit, 17 of them showing bacilli present in the sputum. Subsequent classification will in all probability show that most have become advanced cases. Too large a number of this group continues to find difficulty in submitting to the protracted period of residence necessary in an institution.

Twenty-one "Advanced" cases were dealt with in the course of the year, of whom 3 died. The disease in all cases presented the usual features of definite progressiveness. In 14 the causative organism was continuously present in the sputum.

All accommodation available for children was in continuous use, and, with few exceptions, the results obtained were satisfactory.

Treatment continues to be mainly along generally-accepted lines. Artificial pneumothorax was induced in 24 cases. Of that number 21 may be considered as being successful, though

complete collapse of the affected lung was obtained in few. Three proved unsuccessful and of necessity had to be discontinued. In all 494 refills were given. The benefit derived from sustained artificial pneumothorax treatment in suitable cases is undoubted.

The supply of garden produce, fresh eggs, and poultry has been well maintained throughout the year.

A high standard of health has been enjoyed by all members of staff throughout the year.

A. YOUNG,
Medical Superintendent.

June, 1934.

BELLEFIELD SANATORIUM. — TUBERCULOSIS. — TABLE
SHOWING STAGE OF DISEASE, AGE, RESULT OF TREATMENT,
&c., OF PATIENTS DISMISSED DURING YEAR 1933.

		Result of Treatment.						Work or School.	Reasons for Dismissal.		Result of Sputum Examination.					Complications.					
		Arrested.	Much Improved.	Improved.	Not Improved.	Died.	Less than 4 Weeks.		Fit.	Unfit.	Own accord.	Other reasons.	Transferred.	Admitted +. Discharged +.	Admitted +. Discharged -.	Admitted -. Discharged -.	Admitted -. Discharged +.	No Spit.	Tubercular.	Other.	Totals.
Early Cases—																					
- 5,	...	-	4	-	-	-	-	4	-	1	3	-	-	-	1	-	3	1	-	4	
-10,	...	-	8	2	-	-	-	10	-	8	2	-	-	-	-	10	-	-	-	10	
-15,	...	-	-	3	-	-	-	3	-	3	-	-	-	-	1	-	2	-	-	3	
-20,	...	-	5	9	-	-	-	13	1	6	8	-	-	1	8	-	5	-	-	14	
-25,	...	-	1	3	-	-	-	4	-	4	-	-	-	-	1	-	3	-	-	4	
-35,	...	-	-	2	-	-	-	2	-	2	-	-	-	-	2	-	-	-	-	2	
+35,	...	-	-	1	-	-	-	1	-	1	-	-	-	-	1	-	-	-	-	1	
Totals, ...		-	18	20	-	-	-	37	1	25	13	-	-	1	14	-	23	1	-	38	

Intermediate—

-15, ...	- 2	8	1	-	1	4	7	11	-	-	1	3	5	2	-	-	-	-	11
-20, ...	- 8	26	1	-	1	26	9	29	6	-	2	6	14	2	11	-	-	-	35
-25, ...	- 3	22	6	-	1	18	13	24	5	2	6	5	12	1	7	-	-	-	31
-35, ...	- 8	20	7	-	1	22	13	26	6	3	6	7	12	1	9	-	-	-	35
-45, ...	- 2	3	4	-	-	4	5	6	1	2	2	1	3	1	2	-	-	-	9
+45, ...	-	2	-	-	-	1	1	1	-	1	-	-	2	-	-	-	-	-	2
Totals, ...	- 23	81	19	-	4	75	48	97	18	8	17	22	48	7	29	-	-	-	123

Advanced—

-15, ...	-	-	1	-	-	1	-	-	1	1	-	-	-	-	-	-	-	-	1
-20, ...	-	2	7	2	-	9	6	-	3	7	-	2	-	-	-	-	-	-	11
-25, ...	-	1	1	-	-	2	-	-	2	1	1	-	-	-	-	-	-	-	2
+35, ...	-	-	6	1	-	6	3	-	3	5	-	1	-	-	-	-	-	-	7
Totals, ...	-	-	3	15	3	-	18	9	-	9	14	1	3	-	-	-	-	-	21

Class.		Number Dismissed.	Number of Deaths.	Duration of Residence—Days.						
				-30	-50	-100	-150	-200	-300	+300
Early, ...	...	38	—	-	—	4	9	12	2	11
Intermediate, ...	...	123	—	4	1	29	23	16	22	28
Advanced, ...	...	21	3	-	2	1	4	2	5	7
Totals, ...		182	3	4	3	34	36	30	29	46

PART III.

GENERAL HOSPITALS

AND

OUTDOOR MEDICAL SERVICES.

Introduction.—Reference has been made in previous Annual Reports to the heavy demand on the resources of the general hospitals and outdoor medical services experienced within recent years. Despite favourable meteorological conditions during 1933, this demand has been sustained and must be ascribed mainly to the substantial increase in the number of persons who for economic reasons require to avail themselves of the facilities provided. The work of the hospitals and of the district medical officers is, of course, intimately dependent on the number of persons in receipt of Public Assistance in the city, and the figures relative to this group of the population continue to rise, as is shown in the following table. The figures are expressed as a rate per 10,000 of the population and show an excess for each month on similar figures for the previous year:—

Glasgow.				Glasgow.			
Month.		1932.	1933.	Month.		1932.	1933.
January, ...	...	758	1,031	July, ...	...	869	1,087
February, ...	...	788	1,058	August, ...	...	892	1,113
March, ...	...	809	1,065	September, ...	...	923	1,091
April, ...	...	829	1,083	October, ...	...	927	1,096
May, ...	...	868	1,092	November, ...	...	953	1,115
June, ...	...	834	1,080	December, ...	...	961	1,135

The figures given include dependents and show the number of persons relieved on one day in each month, i.e., 15th of the month. They include indoor and outdoor relief.

Pathological Department.—The following table shows the work of the Pathological Department during the year:—

Pathology—

Number of autopsies,	204
Reports issued to wards (specimens),	253

Bacteriology—

Reports issued to wards (specimens),	4,389
Wassermann Reactions,	6,143

Biochemistry—

Reports issued,	810
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Refereeing of Cases.—The staffs and facilities of the hospitals are at the disposal of the outdoor medical officers for the purposes of refereeing cases. The patients are examined at Stobhill Hospital by a small board, consisting of the appropriate registrar and another medical officer. During the year, 755 special cases were dealt with by the board, 146 disability pensioners were assessed, and in addition 37 school children were examined on behalf of the Education Health Service.

Hospital Statistics.—The method now adopted of obtaining statistics of the work done by the general hospitals was detailed in the Annual Report for 1931.

During the year, 26,242 patients were dismissed or died, an increase of 18·7 per cent. on the total for 1931, and only 1·9 per cent. less than that of last year. The following is a comparison of the work performed by the general hospitals during the past three years:—

TABLE SHOWING COMPARISON OF ADMISSIONS, DISMISSALS, DEATHS, AND AVERAGE DAYS' RESIDENCE IN THE CORPORATION GENERAL HOSPITALS DURING 1931, 1932, AND 1933.

Hospital	Year.	Admissions.	Dismissals.	Deaths.	Average Days' Residence.
Stobhill,	{ 1931	11,266	9,677	1,484	50·99
	{ 1932	14,213	12,255	1,718	44·73
	{ 1933	13,812	12,319	1,555	44·03
Eastern District,	{ 1931	3,225	2,880	348	30·72
	{ 1932	3,720	3,354	364	27·40
	{ 1933	3,961	3,518	440	25·33
Western District,	{ 1931	4,168	3,925	238	19·76
	{ 1932	5,042	4,708	334	16·99
	{ 1933	4,428	4,100	300	17·86
Southern General,	{ 1931	3,483	2,864	686	57·56
	{ 1932	3,077	3,331	679	49·32
	{ 1933	3,942	3,259	751	48·11
Totals,	{ 1931	22,142	19,346	2,756	43·20
	{ 1932	27,052	23,648	3,095	37·78
	{ 1933	26,143	23,196	3,046	37·44

As in former years the brunt of the work was borne by Stobhill Hospital, where about half of the total cases were treated.

The actual figures relating to the dismissals from the hospitals during the year are shown in Tables I and II in the Appendix. The classification of diseases in Table I is that required by the Department of Health for general hospital returns and shows the number of cases dismissed from each hospital in disease groups, together with the percentage of cases in each class, the average days' residence and the percentage of hospital accommodation occupied by the various disease groups. Table II is the more extended classification which has been adopted for tabulation of the cases dismissed from the general hospitals. The method of admission and the disposal of the patients dismissed during the year are set out in Tables III and IV. These tables indicate the volume and nature of the sickness and invalidity with which the hospitals are called upon to deal and now appear for the third year. A few notes are given here regarding certain groups of diseases.

Acute infectious disease accounted for 0·51 per cent. of the dismissals from the four general hospitals, a considerable decrease as compared with last year. Of the total cases in this group, 70 per cent. occurred in Stobhill Hospital where there is always a larger proportion of children. There were 288 patients discharged after influenza. Influenza was not present in the city in epidemic form during 1933, and the majority of cases included in this year's figures refer to patients admitted during an epidemic towards the end of 1932 but not dismissed from hospital until the beginning of the year under review. Most of the 436 cases of tuberculosis were in an advanced stage of the disease, and about 40 per cent. of them died in hospital.

There was a further increase in the demand on accommodation for patients suffering from malignant disease. A total of 597 cases were under treatment with a case mortality of 63·32 per cent. As in former years, malignant disease of the digestive system accounted for almost half of the cases in this group. There were 32 cases of tumours of the central

nervous system with 17 deaths, figures very similar to those of the previous year. Treatment with radium was carried out in 43 cases at Stobhill Hospital:—

MALIGNANT DISEASE.

CASES DISMISSED FROM OR DIED IN THE CORPORATION GENERAL HOSPITALS DURING THE YEAR ENDED 31ST DECEMBER, 1933.

AGE DISTRIBUTION.

	-25 Yrs.		-45 Yrs.		-65 Yrs.		-75 Yrs.		+75 Yrs.		Total.		Grand Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Central Nervous System,	6	5	13	2	3	3	—	—	—	—	22	10	32
Respiratory System, ...	—	—	5	3	25	9	12	1	—	—	42	13	55
Digestive System, ...	1	1	11	8	98	47	77	29	14	8	201	93	294
Genito-Urinary System, ...	—	—	1	2	14	1	6	2	4	1	25	6	31
Female Generative Organs,	—	—	—	34	—	47	—	14	—	3	—	98	98
Breast, ...	—	—	—	1	—	16	—	5	—	3	—	25	25
Other Organs, ...	—	2	2	6	21	6	15	8	—	2	38	24	62
Totals, ...	7	8	32	56	161	129	110	59	18	17	328	269	597

Rheumatism, both in its acute and chronic forms, showed a decrease in comparison with 1932, but was still considerably in excess of the numbers treated in 1931. As in former years, females were in the majority.

There were fewer cases of venereal disease treated. The majority, as in previous years, were in the late or tertiary stages of syphilis. A proportion of almost 4 per cent. of all cases came under the heading of mental disease, a figure similar to that of former years. The average in-patient stay was 85·6 days, as compared with 59·1 days in the previous year. This increase is due in the main to the difficulty experienced in obtaining accommodation in the various asylums for cases requiring transfer. As in former years, a considerable number of the cases treated in these wards were sufficiently recovered to allow of discharge to their own homes. The percentage of mental cases dismissed to asylums or to their own homes in the last four years is shown in the following table:—

	Percentage of Mental Cases Dismissed to Asylums.	Percentage of Mental Cases Dismissed to their own Homes.
1930, ...	45·79	46·0
1931, ...	38·5	51·0
1932, ...	35·69	54·26
1933, ...	38·22	50·77

Cases of senility still occupy a relatively large amount of the hospital accommodation, but the average duration of residence of such cases has shown a downward trend, being 71·6 days as compared with 78·3 days in 1932, and 84·4 days in 1931.

Accidents, injuries and cases admitted after poisoning numbered 574, of which 222 were fractures. More than a third of the patients in this group were treated at the Western District Hospital. Twelve cases of poisoning were treated, with three deaths.

Diseases of the central nervous system accounted for 1,805 patients, or 6·88 per cent. of the total dismissals. Syphilis of the central nervous system again showed an increase, 178 cases receiving treatment in the general hospitals, as compared with 165 in 1932, and 111 in 1931. This increase is in part due to the larger number of patients suffering from general paralysis of the insane who are admitted for modern treatment by malaria therapy.

Diseases of the respiratory system amounted to 12·88 per cent. of the total cases treated. The actual number of patients included in this group was 3,381, the lowest figure so far recorded since these services came under the purview of the Department, and this is probably the result of the favourable climatic conditions experienced throughout the year. The following table shows the number and age distribution of the patients treated for acute respiratory disease for the past three years:—

ACUTE PNEUMONIA AND ACUTE BRONCHITIS.

DISMISSALS AND DEATHS IN THE GENERAL HOSPITALS DURING THE YEARS 1931, 1932, AND 1933.

Age Distribution.	Acute Pneumonia.						Acute Bronchitis.					
	Cases. 1931.	Deaths. 1931.	Cases. 1932.	Deaths. 1932.	Cases. 1933.	Deaths. 1933.	Cases. 1931.	Deaths. 1931.	Cases. 1932.	Deaths. 1932.	Cases. 1933.	Deaths. 1933.
Not stated, ...	1	—	—	—	—	—	2	—	—	—	—	—
— 1 year, ...	98	59	269	171	174	110	111	4	219	26	182	13
— 3 years, ...	158	64	258	86	164	42	109	6	194	2	201	3
— 5 years, ...	33	5	83	4	32	3	31	1	104	—	76	—
— 16 years, ...	82	2	168	12	101	8	89	—	98	—	104	—
— 25 years, ...	37	6	50	10	44	6	59	1	54	—	57	—
— 35 years, ...	29	10	59	22	33	11	112	1	101	3	65	1
— 45 years, ...	44	20	53	25	44	25	114	3	59	1	49	2
— 65 years, ...	89	56	97	66	90	70	72	7	78	8	86	12
— 75 years, ...	52	43	37	30	29	22	18	8	13	3	21	3
+ 75 years, ...	14	11	16	14	16	14	6	2	4	2	18	6
Total, ...	637	276	1,090	440	729	311	723	33	924	45	859	40

There were 1,352 cases of diseases of the circulatory system treated, with 527 deaths, figures very similar to those of previous years. Valvular disease of the heart accounted for more than half, with a case-mortality of 35·6 per cent. Myocarditis, often associated with other conditions, and arterio-sclerosis made up the majority of the remainder of this group.

Diseases of the digestive system again showed the highest frequency of all, representing 15·22 per cent. of the total cases treated. Included in this group are 1,377 children of school age admitted to the Western District Hospital for removal of tonsils and adenoids. There were 117 cases of appendicitis treated, including 93 operations, as also 152 patients with hernia. Enteritis and diarrhoea, mainly in infants under one year of age, accounted for 392 cases, with 120 deaths.

There were 530 cases of caries and dental diseases treated as against 579 in the previous year.

Diseases of the genito-urinary system included 975 cases, gynaecological conditions forming the largest group under this heading. There were 101 cases of acute nephritis and 98 of chronic nephritis.

A considerable increase in the number of patients under treatment for skin diseases has been apparent in recent years. The total cases dealt with during the present year, 991, exceeded the figures for 1931 and 1932 by 35·2 per cent. and 15·8 per cent. respectively. Scabies and other parasitic skin diseases, chiefly in children, totalled 328 cases, which is also an increase on previous years. On the other hand, the average duration of treatment of these parasitic infections, 47·4 days compares favourably with 63·4 days in 1932. In previous years healthy children admitted with their parents or for economic reasons were included under the classification of "no appreciable disease," but this year a separate grouping has been used. There were 840 such children occupying 4·04 per cent. of the total accommodation, and with an average in-patient stay of 47·1 days.

Surgical Operations.—The total number of operations performed during the year was 6,528. The details regarding these operations are shown in Table V. As in previous years, operations for the removal of tonsils and adenoids, dental operations, and operations for gynaecological and obstetrical conditions were in the majority.

Electro-Medical Department.—The undernoted table shows the work done in the Electro-Medical Departments of the General Hospitals:—

No. of radiographic films taken,	7,774
No. of barium meals given,	707
No. of deep X-ray therapy treatments,	883
No. of treatments by radium,	81
No. of sunlight treatments given,	1,697
No. of cases treated by massage,	1,984
No. of massage treatments given,	23,612
No. of cases treated by electricity,	227
No. of electrical treatments given,	4,700
Total treatments given,	30,973

Deaths.—A total of 3,046 deaths occurred during the year giving a case-mortality of 11·6 per cent. It may be pointed out that 585, or some 19 per cent. of the total, occurred within 48 hours of admission to hospital. The following table shows the main causes of death of the patients dying shortly after admission :—

Cause of Death.							No. of Deaths.
Acute Pneumonia,	...	...	...	...	...	...	84
Acute Bronchitis,	...	...	...	...	...	...	12
Chronic Bronchitis,	...	...	...	...	...	...	57
Cardiac Disease,	...	...	...	...	...	...	87
Cerebral Hæmorrhage or Thrombosis,	...	...	...	...	...	...	55
Diseases of the Digestive System,	...	...	...	...	...	...	49
Malignant Disease,	...	...	...	...	...	...	29
Violence,	...	...	...	...	...	...	8
Congenital Debility and other Diseases of Early							
Infancy,	...	...	...	...	...	...	91
Other Causes,	...	...	...	...	...	...	113
							<hr/> 585 <hr/>

OBSTETRICAL SECTION.

The increasing importance of the work done by the obstetrical sections of the General Hospitals in recent years has been emphasised in previous annual reports and is illustrated in the following comparative table :—

				Cases Admitted after Delivery Outside.	Abortions.	Total.
	Ante- Natal Cases.	Cases Delivered in Hospital.				
1930 (7 months),	...	183	897	32	134	1,246
1931,	330	1,828	25	294	2,477
1932,	517	2,430	49	597	3,593
1933,	576	2,582	71	709	3,938

Groups shown as a Percentage of Each Year.

1930 (7 months),	...	14·7	71·9	2·6	10·8	100
1931, ...	...	13·3	73·8	1·0	11·9	100
1932, ...	...	14·4	67·6	1·4	16·6	100
1933, ...	...	14·6	65·6	1·8	18·0	100

3,938 cases were treated in the obstetrical wards in 1933, which is 345 more than the figure for the previous year, and 1,461 more than that for 1931. While a substantial increase is to be noted in all groups, this is most marked in abortions, which accounted for only 10·8 per cent. in 1930, as compared with 18 per cent. in the year under review. The average in-patient stay of obstetrical patients has decreased considerably during the past few years, and was 15·7 days this year. The

nature and extent of the work done in the maternity wards in 1933 may be shown as follows:—

GENERAL HOSPITALS.—OBSTETRICAL SECTIONS.

DISMISSALS DURING 1933.

	Stobhill Hospital.	Eastern District Hospital.	Western District Hospital.	Southern General Hospital.	Total.
<i>Cases Delivered in Hospital—</i>					
Dismissed well,	1,493	469	395	165	2,522
Died,	14	—	1	3	18
Transferred,	12	5	18	7	42
Total dismissals of cases delivered in hospital,	1,519	474	414	175	2,582
<i>Method of Admission of above Cases—</i>					
Admitted during ante-natal period for treatment and delivered in hospital,	214	18	43	57	332
Admitted to labour ward,	571	453	359	117	1,500
Admitted to labour ward (via Glasgow Royal Maternity Hospital),	734	3	12	1	750
Total,	1,519	474	414	175	2,582
Cases admitted during ante-natal period —Dismissed undelivered,	349	64	86	77	576
Cases admitted after delivery,	39	9	5	18	71
Abortions and Miscarriages,	352	144	92	121	709
Infants dismissed alive,	1,387	442	379	161	2,369
„ still-born,	80	22	18	10	130
„ neo-natal deaths,	69	21	23	11	124
Total,	1,536	485	420	182	2,623

A total of 1,801 or 69·8 per cent. of the patients delivered in hospital were cases of normal parturition. The average duration of stay in hospital was 11·8 days, which may be compared with 13·5 days in the previous year. As in former years, cases transferred from the Royal Maternity Hospital by previous arrangement formed a substantial proportion of the whole.

Patients admitted for conditions arising during pregnancy and dismissed undelivered from hospital accounted for some 14·6 per cent. of all the obstetrical cases. The conditions for which these patients received treatment were as follows:—

REASON FOR ADMISSION OF CASES ADMITTED TO ANTE-NATAL
WARD AND DISMISSED UNDELIVERED.

Toxaemias of Pregnancy—

Hyperemesis,	42
Albuminuria,	81
Eclampsia,	3
	<hr/>
	126

Abnormal Presentation or Disproportion—

Breech Presentation,	10
Transverse Presentation,	2
Twin Pregnancy,	1
Contracted Pelvis,	12
Large or Abnormal Child,	1
	<hr/>
	26

Concurrent Diseases independent of Pregnancy—

Cardiac Disease,	20
Renal Disease,	19
Pulmonary Tuberculosis,	10
Other Respiratory Diseases,	47
Other Diseases,	146
	<hr/>
	242

<i>Other Reasons,</i>	<hr/> 182
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Total,	<hr/> 576
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Conditions associated with pregnancy or concurrent diseases independent of pregnancy accounted for 394 of the cases in this group. A portion of the remainder was admitted in false labour or threatened abortion, but in a considerable proportion social or economic reasons were the cause of admission.

In the ante-natal wards 332 patients were treated and delivered in hospital, the average stay of 41·8 days being considerably less than that of former years. Toxaemias of pregnancy were the reason for admission in 37·1 per cent. of this group, and concurrent diseases independent of pregnancy in 50·5 per cent., the remainder being mainly instances of malpresentation or contracted pelvis.

The complications of pregnancy or parturition noted in 283 cases were as follows:—

Toxaemias of Pregnancy,	101
Abnormal Presentation,	77
Disproportion,	45
Placenta Prævia,	14
Others,	46
	<hr/>
Total,	283

There were 93 patients or 2·4 per cent. of all obstetrical cases admitted suffering from concurrent diseases unassociated with pregnancy. Pulmonary tuberculosis was present in 12 cases; cardiac disease in 5; renal disease in 5; other respiratory diseases in 21; and other conditions in 49.

The following table shows the incidence of puerperal fever and pyrexia together with septic and non-septic deaths in the maternity wards:—

HOSPITAL.	No. of Cases.		Cases per 1,000 Births.		No. of Deaths.		Deaths per 1,000 Births.		Case Mortality.
	Fever.	Pyrexia.	Fever.	Pyrexia.	Fever.	Non-Septic.	Fever.	Non-Septic.	Fever.
Stobhill, ...	19	30	12·4	19·6	2*	19	1·3	11·1	10·5%
Eastern District,	10	3	20·6	6·2	1*	—	2·1	—	10·0%
Western District,	20	4	47·6	9·5	2*	3	4·8	7·1	10·0%
Southern General,	5	2	27·4	11·0	—	5	—	27·5	—
	54	39	20·6	14·9	5	27	1·9	10·3	9·3%

* Includes cases dismissed but died in Infectious Disease Hospital after transfer.

The total number of deaths associated with pregnancy was 38, of which 11 were cases of sepsis. 6 of the deaths from sepsis have not been included in the table as the patients were delivered outside and were not associated with the hospitals in so far as obstetrical treatment was concerned. Of the remaining 5, 1 died of sepsis following the manual removal of an adherent placenta and the other 4 were more or less normal confinements. Of the 27 non-septic deaths, 5 were due to pneumonia; 3 were due to pulmonary tuberculosis; 4 resulted from toxæmias of pregnancy, 1 dying undelivered; 4 were due to cardiac disease; 2 followed severe hæmorrhages from placenta prævia; 2 resulted from accidental hæmorrhage; and the remainder were caused by contracted pelvis, acute yellow atrophy, cancer of the rectum, exhaustion following puerperal insanity, primary uterine inertia, collapse following chloroform anæsthesia, and another died from obstetrical shock following a normal parturition.

There were 71 patients admitted to the general hospitals after delivery, with 6 deaths.

Obstetrical Operations.—A total of 1,102 obstetrical operations were performed in the hospitals as follows:—

Craniotomy.	Cæsarean Section.	Forceps Delivery.	Induction of Labour.	Manual Removal of Placenta.	Curettage.	Perineal Repair.	Other.
11	35	85	11	120	438	376	26

The majority were either for manual removal of the placenta or curettage, most of which were associated with abortions or mis-carriages.

Ante-Natal Supervision.—As was observed last year, a considerable proportion of the total obstetrical cases received some advice before parturition. Some 34 per cent. are reported as having had no ante-natal care; 37·8 per cent. attended one or other of the Corporation ante-natal clinics; 15·3 per cent. attended the ante-natal clinic of the Maternity Hospitals; 6·5 per cent. were under the supervision of private practitioners; while 6·3 per cent. received attention in the various hospitals. It is interesting to note that 1,196 cases, or 30·9 per cent. of the total were admitted in their first pregnancy, while 180 patients had had 10 or more pregnancies. Of the total cases treated, a persistent occipito-posterior presentation was found in 15 cases; in 9 a brow or face; in 93 a breech presentation; and in 10 the presentation was transverse. There were 39 twin pregnancies and 1 case of triplets.

Neo-Natal Deaths.—There was a total of 124 neo-natal deaths, and 130 children were still-born.

OUTDOOR MEDICAL SERVICES.

The substantial increase in the demands for the services of the District Medical Officers has been the subject of comment in previous Annual Reports. On account of the very heavy demand experienced during the latter months of 1932 it was found necessary to augment the staff in certain areas of the city, and authority was obtained for an additional 5 medical men to undertake work under the Poor Law, &c., Acts. As a result of these additions there are now 42 District Medical Officers in the service of the Department.

The actual measure of increase in the services rendered by the District Medical Officers for the past three years is shown below:—

	Visits.	Consultations.
1931,	23,230	113,217
1932,	30,159	148,307
1933,	26,519	166,024

Consultations have shown a continued increase, but there was a small decrease in the number of visits during 1933 as compared with that for the previous year. The medical officers performed 1,622 vaccinations, 1,607 were postponed through illness, and 195 cases were returned as insusceptible to vaccination. In addition, 1,686 statutory quarterly visits were paid to boarded-out mental defectives. The number of visits paid to mental defectives has shown a considerable increase during the past few years. As a matter of fact, mental defectives boarded-out in Glasgow have increased by some 35 per cent. in the last three years.

Out-Patient Clinics.—During the year, 10,687 persons were examined and treated at the out-patient clinics attached to the general hospitals, which is 40 per cent. more than the figure for last year. There was a total of 35,909 attendances, as compared with 28,471 in 1932. The Western District Hospital, as formerly, bore the brunt of this work.

Dental Treatment.—A total of 206 persons were supplied with artificial dentures under the Poor Law after approval. The cost of this service was £1,060 14s. 2d., the average cost per applicant being £5 3s.

TABLE I.—GENERAL HOSPITALS.—NUMBER OF CASES DISMISSED FROM EACH HOSPITAL FOR THE YEAR ENDED 31ST DECEMBER, 1933, ARRANGED ACCORDING TO DISEASE AND SEX.

DISEASES (Short Classification).	STOBHILL.			EASTERN DISTRICT.			WESTERN DISTRICT.			SOUTHERN GENERAL.			TOTALS.			Percentage of Total Cases dealt with, Residence.	Average Days' moderation Occupied.	Percentage of Hospital Accommodation Occupied.	
	Males.		Total.	Males.		Total.	Males.		Total.	Males.		Total.	Males.		Total.				
	Females.	Females.	Females.	Females.	Females.	Females.	Females.	Females.	Females.	Females.	Females.	Females.	Females.	Females.					
Acute Infectious Disease, ...	41	52	93	11	8	19	4	2	6	11	5	16	67	134	.51	22.0	.30		
Influenza, ...	77	37	114	51	24	75	21	17	38	36	25	61	185	103	1.10	21.7	.64		
Tuberculosis, Respiratory, ...	143	45	188	24	9	33	26	9	35	67	17	84	260	80	1.29	93.0	3.23		
" Non-Respiratory, ...	31	34	65	7	3	10	3	2	5	12	4	16	53	43	.37	135.6	1.33		
Malignant Disease, ...	216	197	413	31	23	54	20	13	33	61	36	97	328	269	2.28	56.1	3.42		
Rheumatism, Acute, ...	63	106	169	25	20	45	36	27	63	28	36	64	152	189	3.41	48.9	1.70		
" Muscular, etc., ...	101	49	150	41	19	60	25	3	28	52	34	86	219	105	3.24	35.4	1.17		
" Chronic Arthritis, ...	30	31	61	16	10	26	18	15	33	18	24	42	82	80	.62	83.0	1.37		
Veneral, ...	28	21	49	6	3	9	1	2	3	12	7	19	47	33	.31	65.8	.54		
Pregnancy and Diseases connected with Child Bearing, ...	— 2,259			— 691			— 597			— 391			— 3,938			15.7			6.30
Congenital Debility and other Diseases of early infancy and malformations, ...	88	66	154	11	9	20	19	15	34	35	21	56	153	111	264	1.00	40.4	1.09	
Mental, ...	348	341	689	169	109	278	6	3	9	37	31	68	560	484	1,044	3.98	85.6	9.12	
Senile Decay, ...	148	132	280	30	28	58	18	16	34	62	89	151	258	265	523	1.99	71.6	3.82	
Violence, ...	115	84	199	45	23	68	124	85	209	53	45	98	337	237	574	2.19	33.6	1.97	
<i>Diseases not included in above—</i>																			
Nervous System, ...	644	459	1,103	156	81	237	73	39	112	207	146	353	1,080	725	1,805	6.88	81.6	15.04	
Respiratory System, ...	918	676	1,594	369	177	546	303	162	465	481	295	776	2,071	1,310	3,381	12.88	33.8	11.66	
Circulatory System, ...	302	276	578	153	88	241	91	63	154	246	133	379	792	560	1,352	5.15	57.2	7.90	
Digestive System, ...	807	433	1,240	360	188	548	963	816	1,779	283	143	426	2,413	1,580	3,993	15.22	16.4	6.68	
Genito-Urinary System, ...	155	310	465	55	133	188	59	81	140	78	104	182	347	628	975	3.71	34.1	3.40	
Skin, ...	484	349	833	8	11	19	7	4	11	82	47	129	581	411	992	3.78	52.1	5.28	
Other Diseases, ...	417	423	840	127	105	232	98	88	186	142	125	267	784	741	1,525	5.81	41.6	6.48	
No Appreciable Disease, ...	62	28	90	8	13	21	12	4	16	45	9	54	127	54	181	.69	25.3	.47	
Born in Hospital, ...	730	726	1,456	242	221	463	192	210	402	93	79	172	1,257	1,236	2,493	9.50	12.1	3.05	
Healthy Children, ...	426	366	792	8	9	17	5	3	8	12	11	23	451	389	840	3.20	47.1	4.04	
6,374 7,500 13,874 1,953 2,005 3,958 2,124 2,276 4,400 2,153 1,857 4,010 12,604 13,638 26,242 100.00																			
37.3 100.00																			

TABLE II.—NUMBER OF DISMISSALS AND DEATHS IN THE CORPORATION

DISEASES.	Not Stated.		- 1		- 3		- 5		A	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<i>Acute Infections—</i>										
Influenza, including influenzal pneumonia,	—	—	1	—	—	1	1	1	13	8
Acute infectious diseases, including all notifiable diseases, together with measles, rubella, whooping-cough, mumps, but excluding pneumonia and puerperal fever, post-encephalitis lethargica and post-poliomyelitis, classified separately, ...	—	—	10	10	10	8	7	7	8	30
Rheumatic fever, acute and sub-acute rheumatism (including chorea),	—	—	—	—	—	—	2	—	43	5
Other acute infections not requiring segregation,	—	—	4	—	5	9	1	3	9	3
<i>Venereal Diseases—</i>										
Syphilis, gonorrhœa and soft sore, syphilis, including all tertiary manifestations of the disease, except aneurysm and cardiac disease. Syphilis of the central nervous system is also classified separately. Stricture classified under other diseases of the genito-urinary system,	—	—	3	2	—	—	—	—	—	—
<i>Tuberculosis—</i> Pulmonary,	—	—	—	—	1	1	—	—	5	4
Non-pulmonary,	—	—	3	3	1	4	1	2	13	2
<i>Chronic Rheumatism—</i>										
Joints,	—	—	—	—	—	—	—	—	3	3
Fibrous tissues, including muscular rheumatism, sciatica, and lumbago,	—	—	—	—	—	—	—	1	2	1
<i>Metazoan Parasites,</i>	—	—	—	—	—	—	—	—	—	1
<i>Other Parasitic Diseases—</i>										
Scabies, pediculosis, etc.,	—	—	19	11	12	10	12	14	82	57
<i>Diseases of the Blood—</i>										
Constitutional, diathetic and general diseases, diseases of the ductless glands, deficiency diseases (not including rickets),	—	—	1	1	2	—	—	—	5	6
Malnutrition (deprivation),	—	—	—	—	—	—	—	—	—	—
<i>Malignant Disease of (cancer and sarcoma)—</i>										
Central nervous system,	—	—	—	—	—	—	—	—	—	4
Respiratory system,	—	—	—	—	—	—	—	—	—	—
Digestive system,	—	—	—	—	—	—	—	1	—	—
Genito-urinary system,	—	—	—	—	—	—	—	—	—	—
Female generative organs,	—	—	—	—	—	—	—	—	—	—
Breast,	—	—	—	—	—	—	—	—	—	—
Other organs,	—	—	—	—	—	—	—	—	—	1
<i>Simple Tumours, Cysts, etc.,</i>	—	—	—	1	—	—	—	—	2	—

GENERAL HOSPITALS DURING THE YEAR ENDED 31ST DECEMBER, 1933.

GROUPS.															
-25	F.	M.	-45	F.	M.	-65	F.	M.	-75	F.	M.	+75	F.	M.	Total.
															Total.
	19	80	41	42	29	5	2	2	2	185	103	288	8	6	14
7	8	12	8	8	6	4	—	1	—	67	67	134	2	1	3
3	37	61	49	19	26	3	1	1	1	152	189	341	4	2	6
3	4	4	3	8	2	—	1	—	—	34	35	69	3	3	6
1	7	29	16	12	4	2	3	—	—	47	33	80	3	1	4
6	20	107	37	109	16	11	2	1	—	260	80	340	102	26	128
8	10	16	8	9	3	2	—	—	1	53	43	96	19	24	43
4	1	24	17	38	38	11	18	2	3	82	80	162	2	7	9
2	8	98	26	84	44	19	19	4	6	219	105	324	—	—	—
—	—	—	1	—	—	—	—	—	—	—	2	2	—	—	—
21	13	35	15	7	3	4	—	2	1	194	134	328	—	—	—
9	25	32	62	39	71	16	24	—	7	104	196	300	18	24	42
1	1	—	—	1	—	—	—	—	—	2	1	3	—	—	—
6	1	13	2	3	3	—	—	—	—	22	10	32	12	5	17
—	—	5	3	25	9	12	1	—	—	42	13	55	31	8	39
1	—	11	8	98	47	77	29	14	8	201	93	294	144	63	207
—	—	1	2	14	1	6	2	4	1	25	6	31	24	1	25
—	—	—	34	—	47	—	14	—	3	—	98	98	—	42	42
—	—	—	1	—	16	—	5	—	3	—	25	25	—	19	19
—	1	2	6	21	6	15	8	—	2	38	24	62	19	10	29
—	1	7	2	3	—	—	—	—	—	12	6	18	—	—	—

TABLE II.—NUMBER OF DISMISSALS AND DEATHS IN THE CORPORATIO

DISEASES.	AGE									
	Not Stated.		-1		-3		-5		-16	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<i>Diseases of the Nervous System—</i>										
Syphilis, including G.P.I. and tabes,	—	—	—	—	—	—	—	—	1	—
Cerebral hæmorrhage, embolism and thrombosis, ...	—	—	—	—	—	—	—	—	1	—
Epilepsy, ...	—	—	—	1	1	1	2	—	6	—
So-called functional diseases of central nervous systems, e.g., neurasthenia, ...	—	—	—	—	—	—	—	—	1	—
Post-poliomyelitis anterior, ...	—	—	—	—	—	—	—	—	1	—
Post-encephalitis lethargica, ...	—	—	—	—	—	—	—	—	2	—
Insanity (all mental cases), ...	1	—	—	—	—	—	—	—	4	—
Idiocy, imbecility, feeble-mindedness, ...	—	—	—	2	3	7	8	12	28	2
Meningitis (not C.S.F. or tubercular meningitis), ...	—	—	1	1	2	—	—	—	4	—
Other diseases of central nervous system, ...	—	—	1	1	—	1	1	—	7	—
Diseases of the peripheral nervous system, ...	—	—	1	—	1	1	—	—	—	—
Diseases of the eye, ...	—	—	3	3	3	6	2	3	9	—
Diseases of the throat and nose, excluding infection of or hypertrophy of tonsils and adenoids, ...	—	—	1	1	2	—	—	—	15	—
Diseases of the ear, ...	—	—	9	6	10	5	5	4	28	2
<i>Diseases of the Circulatory System—</i>										
Valvular heart disease, ...	—	—	—	—	—	—	—	—	14	2
Other heart disease, ...	—	—	—	—	—	—	1	—	1	—
Arterio-sclerosis, ...	—	—	—	—	—	—	—	—	—	—
Varicose veins and varicose ulceration of legs, ...	—	—	—	—	—	—	—	—	—	—
Other diseases, ...	—	—	—	—	—	—	—	—	—	—
<i>Diseases of Respiratory System—</i>										
Pneumonia—acute, ...	—	—	109	65	84	80	19	13	73	2
Bronchitis—acute, ...	—	—	111	71	110	91	45	31	56	4
Chronic bronchitis, including asthma and other complications, ...	—	—	—	—	2	—	—	2	12	—
Other diseases, ...	—	—	3	1	3	3	2	5	30	3
<i>Diseases of the Digestive System—</i>										
Hypertrophy of tonsils and adenoids, ...	—	—	—	1	4	2	11	13	744	68
Acute tonsillitis or pharyngitis, ...	—	—	—	—	9	7	3	3	11	1
Gastritis, ...	—	—	—	1	1	—	1	1	5	—
Gastric and duodenal ulcer, ...	—	—	—	—	—	—	—	—	—	—
Appendicitis, ...	—	—	—	—	—	1	1	1	19	1
Diarrhœa and enteritis, ...	—	—	111	90	45	56	5	6	15	—
Caries and other diseases of teeth and gums (dental cases), ...	—	—	—	—	—	—	6	2	10	1
Hernia of abdominal viscera, ...	—	—	19	1	6	—	2	—	6	—
Hæmorrhoids, ...	—	—	—	—	—	—	—	—	—	—
Other diseases, ...	—	—	2	5	5	3	6	8	24	1
<i>Diseases of Genito-Urinary System—</i>										
Acute nephritis, ...	—	—	—	—	1	2	2	1	12	2
Chronic nephritis, ...	—	—	—	—	—	—	—	—	2	—
Prostatitis, ...	—	—	—	—	—	—	—	—	—	—
Stricture, ...	—	—	—	—	—	—	—	—	—	—
Diseases of the female generative organs, ...	—	—	—	—	—	1	—	—	—	—
Other diseases of genito-urinary system, ...	—	—	5	3	3	6	—	2	6	1

GENERAL HOSPITALS DURING THE YEAR ENDED 31ST DECEMBER, 1933.—*Continued.*

GROUPS.															
-25		-45		-65		-75		+75		Total.		Grand	Deaths.		Total.
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.	M.	F.	Total.
4	3	52	16	68	16	15	3	—	—	140	38	178	32	7	39
—	—	3	15	114	85	120	70	40	32	278	202	480	168	125	293
7	22	33	35	15	15	4	2	—	—	88	81	169	6	3	9
7	33	82	59	39	30	5	2	1	—	135	128	263	—	—	—
—	1	—	—	—	—	—	—	—	—	1	1	2	—	—	—
6	9	20	10	8	4	1	—	—	—	47	26	73	11	4	15
2	71	220	166	161	141	19	20	2	3	479	405	884	15	13	28
5	16	13	12	3	3	—	1	1	—	81	79	160	1	—	1
2	1	5	1	—	1	—	—	—	—	14	7	21	13	3	16
5	13	52	32	46	39	19	6	4	2	135	96	231	20	13	33
1	1	18	9	19	6	3	2	—	2	43	22	65	—	—	—
1	2	10	6	17	5	6	3	1	2	52	41	93	—	—	—
7	3	20	8	3	3	2	1	—	1	50	21	71	—	—	—
0	8	25	9	7	4	2	—	1	—	97	62	159	5	2	7
23	21	65	59	85	65	31	33	11	14	229	218	447	82	77	159
7	2	25	16	108	78	97	59	43	42	282	199	481	142	110	252
1	—	—	2	60	27	70	27	34	21	165	77	242	63	36	99
5	3	21	15	42	28	16	10	—	5	84	61	145	—	2	2
—	—	5	1	23	2	4	1	—	1	32	5	37	12	3	15
25	19	44	33	60	30	19	10	11	5	444	283	727	192	119	311
30	27	60	54	53	33	11	10	5	13	481	378	859	22	18	40
33	22	245	95	382	200	176	104	56	59	906	491	1,397	137	77	214
37	28	88	47	64	31	10	11	3	1	240	158	398	21	12	33
9	9	15	3	—	1	—	—	—	—	783	715	1,498	1	—	1
15	19	39	23	5	6	1	3	—	1	83	78	161	1	—	1
22	7	163	30	65	20	18	13	3	1	278	81	359	2	1	3
7	3	135	4	52	6	3	3	—	—	197	16	213	9	2	11
21	10	35	8	4	—	1	—	—	—	81	36	117	3	5	8
2	1	12	8	12	8	5	5	2	3	209	185	394	67	53	120
46	39	210	158	19	24	2	—	2	—	295	235	530	—	—	—
4	—	38	6	39	15	7	5	3	—	124	28	152	3	4	7
1	—	54	5	38	6	4	2	—	2	97	15	112	—	—	—
23	13	90	55	78	68	28	16	10	4	266	189	455	24	25	49
7	4	21	16	7	5	1	1	1	—	52	49	101	6	2	8
—	4	17	16	21	21	6	6	2	1	48	50	98	25	21	46
—	—	—	—	11	—	27	—	16	—	54	—	54	18	—	18
—	—	5	—	18	—	7	—	—	—	30	—	30	3	—	3
—	84	—	219	—	49	—	9	—	2	—	368	368	—	3	3
14	24	65	59	34	39	26	12	10	2	163	161	324	17	16	33

TABLE II.—NUMBER OF DISMISSALS AND DEATHS IN THE CORPORATIO

DISEASES.	AGE									
	Not Stated.			-1		-3		-5		-16
	M.	F.	M.	F.	M.	F.	M.	F.	M.	
<i>Pregnancy—</i>										
Diseases peculiar to pregnancy and other diseases complicated by pregnancy—ante-natal only, ...	—	—	—	—	—	—	—	—	—	—
<i>Parturition and Puerperium—</i>										
Diseases peculiar to pregnancy and other diseases complicated by pregnancy : Parturition in Hospital, ...	—	—	—	—	—	—	—	—	—	—
Lying-in normal, ...	—	—	—	—	—	—	—	—	—	—
Lying-in with puerperal complications, ...	—	—	—	—	—	—	—	—	—	—
Lying-in with sepsis and pyrexia, ...	—	—	—	—	—	—	—	—	—	—
Lying-in with other diseases, ...	—	—	—	—	—	—	—	—	—	—
Abortion and miscarriage, ...	—	—	—	—	—	—	—	—	—	—
Delivered outwith hospital, ...	—	—	—	—	—	—	—	—	—	—
Born in hospital, ...	—	—	1,257	1,236	—	—	—	—	—	—
Diseases of the skin, ...	—	—	45	16	49	48	25	33	57	—
Inflammation of cellular tissue, including acute inflammation of lymphatic glands, ...	—	1	9	15	22	36	13	7	55	—
Acquired deformities of bones, joints, etc., ...	—	—	—	—	—	—	—	—	—	—
Inflammation of bones, joints, and organs of locomotion, excluding tuberculosis and rheumatism, ...	—	—	—	1	—	1	—	—	11	—
Diseases, injuries, and malformation of the newly-born, ...	—	—	26	20	—	—	—	—	—	—
Congenital malformations and deformities (under 5 years), ...	—	—	14	2	12	5	1	1	—	—
Congenital malformations and deformities (over 5 years), ...	—	—	—	—	—	—	—	—	5	—
Diseases peculiar to infancy and childhood, ...	—	—	70	59	21	16	7	7	2	—
Rickets and malnutrition, ...	—	—	8	13	5	8	3	2	1	—
Accidents and injuries—fractures, ...	—	—	3	3	2	2	6	—	25	—
Accidents and injuries—others, ...	—	—	7	3	23	6	14	12	64	—
Poisoning, ...	—	—	—	—	1	1	—	—	1	—
<i>Alcoholism—</i>										
Including acute alcoholism, alcoholic gastritis, delirium tremens, alcoholic cirrhosis, etc., ...	—	—	—	—	—	—	—	—	—	—
<i>Senility—</i>										
Old age, including senile dementia and senile gangrene, ...	—	—	—	—	—	—	—	—	—	—
<i>Debility following operations, childbirth and acute infections, ...</i>	—	—	1	4	1	—	1	1	1	—
Healthy Children, ...	—	—	135	121	69	53	48	53	199	10
Diseases ill-defined or not specified, ...	—	—	—	—	1	—	1	—	16	—
No appreciable disease, ...	—	—	7	9	10	7	5	1	22	—
	1	1	1,999	1,783	542	489	270	253	1,791	1,6

GENERAL HOSPITALS DURING THE YEAR ENDED 31ST DECEMBER, 1933.—*Continued.*

GROUPS.																					
-25	F.	M.	-45	F.	M.	-65	F.	M.	-75	F.	M.	+75	F.	M.	Total.	F.	Grand	Deaths.	F.	Total.	
220	—		354	—		—	—	—	—	—	—	—	—	—	576	576	576	—	6	6	
108	—		218	—		5	—	—	—	—	—	—	—	—	332	332	332	—	4	4	
891	—		905	—		3	—	—	—	—	—	—	—	—	1,801	1,801	1,801	—	—	—	
104	—		177	—		2	—	—	—	—	—	—	—	—	283	283	283	—	9	9	
45	—		27	—		—	—	—	—	—	—	—	—	—	73	73	73	—	4	4	
42	—		51	—		—	—	—	—	—	—	—	—	—	93	93	93	—	1	1	
171	—		528	—		10	—	—	—	—	—	—	—	—	709	709	709	—	2	2	
28	—		43	—		—	—	—	—	—	—	—	—	—	71	71	71	—	6	6	
3	38	83	28	58	21	14	13	3	3	1,257	1,236	2,493	72	52	124	387	277	664	1	4	5
4	49	87	79	63	20	14	17	6	4	303	279	582	6	2	8	303	279	582	6	2	8
5	3	11	2	9	6	4	1	—	4	30	22	52	—	—	—	30	22	52	—	—	—
0	7	15	10	11	4	4	1	—	—	51	28	79	2	—	2	51	28	79	2	—	2
—	—	—	—	—	—	—	—	—	—	26	20	46	18	18	36	26	20	46	18	18	36
—	—	—	—	—	—	—	—	—	—	27	8	35	5	2	7	27	8	35	5	2	7
4	—	1	—	—	—	—	—	—	—	10	3	13	1	1	2	10	3	13	1	1	2
—	—	—	—	—	—	—	—	—	—	100	83	183	49	31	80	100	83	183	49	31	80
—	—	—	—	—	—	—	—	—	—	17	25	42	3	—	3	17	25	42	3	—	3
4	4	19	7	23	36	20	27	13	14	115	107	222	9	15	24	115	107	222	9	15	24
2	6	42	19	37	30	15	13	2	8	216	124	340	8	3	11	216	124	340	8	3	11
—	—	1	3	3	1	—	—	—	—	6	6	12	1	2	3	6	6	12	1	2	3
—	—	38	6	58	21	8	1	—	—	104	28	132	3	—	3	104	28	132	3	—	3
—	—	—	—	27	15	127	121	104	129	258	265	523	99	96	195	258	265	523	99	96	195
3	4	12	13	7	1	2	—	—	—	28	23	51	—	1	1	28	23	51	—	1	1
—	—	—	—	—	—	—	—	—	—	451	389	840	—	—	—	451	389	840	—	—	—
7	19	33	32	23	30	7	—	1	1	89	95	184	—	—	—	89	95	184	—	—	—
2	13	45	11	20	1	6	—	—	—	127	54	181	—	—	—	127	54	181	—	—	—
72,430	2,929	4,164	2,659	1,691	1,174	773	422	420	12,604	13,638	26,242	1,789	1,257	3,046	72,430	2,929	4,164	2,659	1,691	1,174	773

TABLE III.—TABLE SHOWING THE METHOD OF ADMISSION OF ALL CASES DISMISSED FROM THE GENERAL HOSPITALS DURING THE YEAR,

Method of Admission.	Stobhill Hospital.	Eastern District Hospital.	Western District Hospital.	Southern General Hospital.	Total.
On certificate of District Medical Officer,...	4,936	987	544	1,836	8,303
On certificate of other practitioner, ...	5,364	1,235	960	1,424	8,983
Per hospital consultant,	97	72	11	10	190
Per specialist clinic,	9	275	163	104	551
Transferred from other Corporation General Hospital,	256	21	15	5	297
From infectious disease hospital,	110	6	3	15	134
From voluntary hospital,	144	39	1	65	249
From poorhouse,	205	1	—	275	481
From Maternity Hospital (including over- flows),	836	7	12	5	860
Gate admissions,	46	762	909	52	1,769
Arrangements with other Authorities, ...	19	6	—	6	31
Born in hospital (legitimate),	1,207	420	356	141	2,124
Born in hospital (illegitimate),	249	43	46	31	369
Per Public Assistance Department, ...	177	5	—	1	183
Per prison or police,	103	78	—	13	194
From asylums,	22	—	—	18	40
Per Education Health Service,	3	—	1,379	4	1,386
Per Tuberculosis Officer, etc.,	47	—	—	3	50
Others,	44	1	1	2	48
	13,874	3,958	4,400	4,010	26,242

TABLE IV.—TABLE SHOWING DISPOSAL OF CASES DISMISSED FROM THE GENERAL HOSPITALS DURING THE YEAR ENDED 31ST DECEMBER 1933.

To—		To—	
Own home,	20,683	Tuberculosis Hospital, ...	29
Other Corporation General Hospitals,	214	Poorhouse,	592
Asylum,	567	Own Parish,	65
Convalescent Home,	46	Public Assistance Dept., ...	21
Voluntary Hospital,	5	Police,	27
Out-patient Clinic,	179	Boarded-Out,	304
Infectious Disease Hospital, 424		Died,	3,046
		Others,	40
			26,242

TABLE V.—RETURN OF OPERATIONS PERFORMED IN GENERAL HOSPITALS FROM 1ST JANUARY TO 31ST DECEMBER, 1933.

	STOBHILL.			EASTERN DISTRICT.			WESTERN DISTRICT.			SOUTHERN GENERAL.			TOTALS.		
	No. of Operations. A	B	C	No. of Operations. A	B	C	No. of Operations. A	B	C	No. of Operations. A	B	C	No. of Operations. A	B	C
1. Operations on Brain, ...	22	6	—	—	—	—	4	1	—	1	—	—	27	7	—
2. Operations on Spinal Cord and Peripheral Nervous System, ...	7	25	—	—	—	—	—	—	—	2	2	—	9	27	—
3. Operations on Thorax, other than Induction of Pneumothorax, ...	4	5	6	1	7	—	1	—	—	7	4	1	13	16	7
4. Operations for Induction of Pneumothorax, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5. Operations on Blood Vessels (excluding Varicose Veins and Hemorrhoids), ...	1	22	—	—	—	—	—	—	—	—	1	—	1	23	—
6. Operations for Varicose Veins, ...	1	—	13	—	—	—	—	—	—	4	—	—	5	—	13
7. Operations for Hemorrhoids, ...	46	—	—	8	1	—	2	1	—	20	—	—	76	2	—
8. Operations on Digestive System—Abdominal Section (excluding Appendicectomy), ...	83	—	—	21	—	—	13	—	—	37	—	—	154	—	—
9. Appendicectomy, ...	25	—	—	26	—	—	16	—	—	26	—	—	93	—	—
10. Herniotomy, ...	40	2	—	19	—	—	9	1	—	38	1	—	106	4	—
11. Other Operations on Digestive System, ...	13	3	2	9	1	1	1	—	—	9	—	—	32	4	3
12. Operations on Genito-Urinary System, ...	92	9	61	17	3	5	10	6	4	16	1	40	135	19	110
13. Operations on Female Organs of Generation (i.e., Gynaecological Operations), ...	121	—	50	104	—	2	31	—	—	17	—	—	273	—	52
14. Operations for Excision of Cancer of the Breast, ...	1	—	—	—	—	—	—	—	—	2	—	—	3	—	—
15. Operations for Insertion of Radium in Malignant Disease, ...	30	2	11	—	—	—	—	—	—	—	—	—	30	2	11
<i>Carried forward,</i> ...	486	74	143	205	12	8	87	9	4	179	9	41	957	104	196

TABLE V.—RETURN OF OPERATIONS PERFORMED IN GENERAL HOSPITALS FROM 1ST JANUARY TO 31ST DECEMBER, 1933.—*Continued.*

	STOBHILL.	EASTERN DISTRICT.			WESTERN DISTRICT.			SOUTHERN GENERAL.			TOTALS.					
		No. of Operations. A B C	No. of Operations. A B C	No. of Operations. A B C	No. of Operations. A B C	No. of Operations. A B C	No. of Operations. A B C	No. of Operations. A B C	No. of Operations. A B C							
<i>Brought forward,</i>	...	486	74	143	205	12	8	87	9	4	179	9	41	957	104	196
16. Operations on Bones, Joints and Organs of Locomotion,	...	111	11	25	12	1	1	10	—	—	16	2	2	149	14	28
17. Amputations of Arm, Hand, Leg, or Foot,	...	7	—	—	—	—	—	2	—	—	3	—	—	12	—	—
18. Amputations of Fingers or Toes,	...	3	—	—	—	—	—	—	1	2	2	—	—	5	1	2
19. Incisions for Acute Abscesses and Cellulitis,	...	242	15	13	39	7	8	52	19	12	51	18	3	384	59	36
20. Operations on Skin, Subcutaneous Tissues and Superficial Lymphatic Glands,	...	47	7	1	12	—	2	5	1	12	12	1	—	76	9	15
21. Operations on Throat and Nose (excluding removal of Tonsils and Adenoids),	...	26	191	27	—	—	—	—	—	—	—	—	1	26	191	28
22. Operations for Removal of Tonsils and Adenoids,	...	123	19	—	—	—	—	1,371	—	—	8	—	—	1,502	19	—
23. Operations on Eye,	...	34	146	26	—	—	—	—	—	—	—	—	—	34	146	26
24. Operations on Ear,	...	125	54	212	—	—	—	1	—	—	4	—	—	130	54	212
25. Operations on Teeth and Gums,	...	440	9	3	278	1	—	183	—	—	42	25	1	943	35	4
26. Obstetric Operations,	...	446	—	266	151	—	—	111	—	—	128	—	—	836	—	266
27. Diathermy,	...	26	2	1	—	—	—	—	—	—	—	—	—	26	2	1
		2,116	528	717	697	21	19	1,822	30	30	445	55	48	5,080	634	814

Note.—A. With general or spinal anæsthetic. B. With local anæsthetic. C. Without anæsthetic.

DIABETES—SUPPLY OF INSULIN.

Supplies of Insulin are given to persons whose circumstances warrant such assistance and who are not already provided for under the National Insurance Scheme or Public Assistance.

There were 62 new applicants during the year, 51 of these were married women or widows; 2, while of insurable age, were outwith the National Insurance Scheme; 2 had ceased to be insured; 3 were under 16 years of age; and 4 were patients in Corporation Hospitals.

Cases on Roll at 31st December, 1932, ...	...	144
Cases applying for the first time during 1933, ...	62	
Cases who discontinued treatment prior to 31st December, 1932, but re-applied during 1933, ...	20	
		<hr/> 82
		226
Cases who died during 1933, ...	21	
Cases who discontinued supply during 1933, ...	37	
		<hr/> 58
Leaving cases on the Roll at 31st December, 1933, ...		<hr/> 168

The 37 cases who discontinued treatment were visited and enquiries made as to the reason. These may be summarised as follows:—

Removed beyond City Boundary, ...	...	4
Discontinued on medical advice, ...	...	11
Discontinued of own accord, ...	...	16
To get supplies from P.A.D., ...	...	1
Hospital cases now dismissed, ...	...	1
Other reasons, ...	...	4
		<hr/> 37

The daily dosage of the cases on the roll at 31st December, 1933, is as follows:—

No. of Cases.	Daily Amount.
—	Under 5 units.
14	5 to 14 units.
33	15 to 24 units.
38	25 to 34 units.
27	35 to 44 units.
17	45 to 54 units.
25	55 units and over.
7	Double strength Insulin.
1	Extra double strength Insulin.
6	Not stated.

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During the year 16,944 phials of ordinary strength insulin (100 units per 5 c.cs.), 1,303 phials of double strength (200 units per 5 c.cs.), and 24 phials of extra double strength (400 units per 5 c.cs.) were issued, the total cost being £982 0s. 3d. The corresponding figures for 1932 were 14,170 phials, at a cost of £1,115 8s.

PART IV

MENTAL HOSPITALS.

Attention has been directed in the reports of recent years to the shortage of accommodation and the consequent overcrowding which exists in mental hospitals throughout the country generally. Overcrowding is still marked in the hospital portions of the institutions of the City and considerable difficulty has been experienced in finding beds for cases requiring treatment. At the present time legal certification is resorted to in practically all cases admitted to the mental hospitals, but it is hoped that when the pressure on the available accommodation becomes less severe it will be possible to make greater use of the existing facilities for the admission of patients on a voluntary basis.

For some years the greater proportion of cases admitted to the Royal Asylums throughout Scotland have been on a voluntary basis, but it has not been possible to follow this example in the District Asylums owing to lack of accommodation for cases requiring certification. Patients capable of being treated on a voluntary basis are admitted to the observation wards of the general hospitals where their illnesses can be investigated and treated, but in the general hospitals there do not exist facilities for the employment and recreation in the open air at all comparable with those existing in the mental hospitals. This point is being kept in mind in connection with the extension at Hawkhead Mental Hospital, which has now been authorised by the Corporation and the erection of which is likely to be commenced at an early date.

The practice of boarding-out cases in asylums belonging to outside authorities has been continued throughout the year, 135 cases having been dealt with in this way. This figure compares with 69 for the previous year, but is accounted for by the fact that a much greater number of vacancies occurred in these institutions through the discharge of patients rather than that there was an increase of accommodation available for Glasgow cases. The total number of Glasgow cases boarded-out in other asylums at 31st December, 1933, showed a decrease of 10 com-

pared with the figure at 31st December, 1932. A continued shrinkage of accommodation in other asylums available for Glasgow cases is to be expected from year to year in future.

Boarding-out with private guardians of quiet, harmless patients has been continued throughout the year in all suitable cases.

The re-conditioning of the South Block and the licensed wards at the Southern General Hospital has now been completed, and the accommodation thus afforded has been utilised for the reception of quiet, chronic cases from the mental hospitals. The accommodation thereby set free in the mental hospitals has allowed of further reclassification of patients and rearrangements within the hospitals themselves, and has provided a considerable number of beds for the reception of acute cases. At Gartloch Mental Hospital a rearrangement of the accommodation at the farm colony was effected whereby three first-floor dormitories were converted into a hospital ward for senile and infirm cases without interfering with the purpose for which the colony was originally erected, the housing of patients able to work on the farm. As a result of this rearrangement, along with further re-classification of patients in the wards of the hospital, the effective accommodation for recent, acute cases was increased by more than 30 beds. This and similar expedients carried out in the other mental hospitals have provided for the current needs of the City in respect of certified cases, but they do not touch the wider aspects of the overcrowding generally.

At Gartloch and Woodilee Mental Hospitals the nurses' homes are inadequate for the staff. The Corporation has authorised the erection of a new nurses' home at Hawkhead Mental Hospital with accommodation for 120 nurses.

The extension at Hawkhead Mental Hospital has been designed to accommodate 200 patients divided equally between the sexes. There will be four wards in each division, one of which is designed for convalescent patients who will be discharged home on recovery without the necessity of transfer to any other part of the institution. In the administrative block of the new extension provision is made for electrical, dental, and other modern forms of therapy, and an additional feature is the provision of examination and consulting rooms in anticipation of the development of a clinic for out-patients in connection with the hospital.

With a view to increasing the interest of the general public in the work of the mental hospitals, an exhibition of work done by patients in these hospitals was held in the M'Lellan Galleries, on Friday, 5th May. The exhibits included many useful house-

hold articles such as rugs, rubber mats, basket chairs, tables, ornaments, crochet and needlework, &c., and were uniformly of a high standard of excellence, and the interest of the public was evidenced by the fact that the hall was crowded during the whole course of the exhibition. Exhibitions of this kind serve an exceedingly useful purpose in reminding the public that, although the patients in these hospitals are unfit to be at large in the community, every effort is made to stimulate their interest in agreeable forms of occupation during their stay in the hospitals and in this way increase their feelings of self respect and personal capability which goes a long way towards hastening their recovery.

Questions in connection with the administration and management of the farms at the mental hospitals were raised by the Senior Medical Commissioner of the Board of Control for Scotland in one of his periodic reports on Gartloch Mental Hospital, and as a result the following report was prepared and submitted to the Committee following on a general discussion on the subject with the Board of Control:—

FARMS AT MENTAL HOSPITALS.

The following report on farms at the mental hospitals is submitted in accordance with the remit contained in the Minute of the Sub-Committee on Mental Services of date 16th December last (Print No. 6, page 538), viz. :—

“ With reference to Minute of date 23rd ultimo (Print No. 4, page 302) appointing a special sub-committee to interview the General Board of Control with regard to certain matters raised in the report by Dr. Marr, Commissioner of the General Board of Control, on his visit to Gartloch in March last, the Town Clerk reported that the said special sub-committee had interviewed the General Board on 29th ultimo, when the Board indicated that the medical superintendents should have general control of the farms, and the sub-committee, after discussion, agreed to continue consideration of the subject-matter pending the submission of a report by the Medical Officer of Health with regard to the method of conducting the farms.”

The original conception of an asylum farm as an adjunct to the institution was to provide outdoor occupation along with a measure of therapy for the patients, and to provide the amenity of a large open space where patients could be exercised in the open air away from the eyes of the curious. In the course of time, however, these farms have developed into productive enterprises for the supply of farm produce to the respective institutions, and in particular as dairy farms supplying Grade “ A ” (T.T.) milk to their own and other hospitals of the Corporation. It will be apparent that this policy, which had been adopted before the mental hospitals were transferred to the Corporation, implies that the farms now exist for a dual purpose, (1) to provide work for the inmates, and (2) to function as productive concerns, involving management on economic and technical lines. The questions which have been raised, particularly by the General Board of Control, concern the general utility of the farms and their management in relation to the mental institutions in whose policies they are situated. As the position which has developed is somewhat involved and embraces questions of medical administration and treatment, as well as the technical and economic aspects of farm management, it has been thought desirable to include in this report, for the information of the Sub-Committee, a number of details concerning the farms, their extent, function, finance, and the managerial responsibilities involved, together with a summary of the existing facilities for employment of the patients.

THE FARMS.

Extent of Estates.—Appended to the Statements of the Farm Accounts for the year ended 15th May, 1930, were tables which showed the area of the estates associated with the four mental institutions transferred to the Public Health Department to be as follows :—

Woodilee Mental Hospital—

					Acres.	Roods.	Poles.
Land occupied by institution buildings,	...	...			41	2	—
Pleasure ground,	...	...	...	...	22	1	30
Garden ground,	...	...	...	...	14	—	—
Farm land—under cultivation,	...	...	...	...	313	—	—
in permanent pasture,	...	...	...	...	271	—	—
non-arable,	...	...	...	...	25	—	—
Woodlands,	...	...	...	...	27	—	—
					713	3	30
Bedcow Farm,	...	...	...	...	117	3	8
Total,					831	2	38

Gartloch Mental Hospital—

Land occupied by institution buildings,	...	...	...	...	36	1	5
Pleasure ground,	...	...	...	...
Garden ground,	...	...	...	...	8	1	9
Farm land—under cultivation,	...	...	...	...	222	2	—
in permanent pasture,	...	...	...	...	84	—	—
non-arable,	...	...	...	...	103	—	26
Total,					454	1	—

Stoneyetts Institution—

Land occupied by institution buildings,	...	...			2	—	16
Pleasure ground,	...	...	...	...	16	—	—
Garden ground,	...	...	...	...	5	—	—
Farm land—under cultivation,	...	...	...	...	29	—	17
Total,					52	—	33

Hawkhead Mental Hospital—

Land occupied by institution buildings,	...	...			7	—	—
Pleasure ground,	...	...	...	...	22	—	—
Garden ground,	...	...	...	...	7	—	—
Farm land—under cultivation,	...	...	...	...	215	—	—
in permanent pasture,	...	...	...	...	33	—	—
non-arable,	...	...	...	...	47	—	—
Total,					331	—	—

Prior to the date of transfer, farming at Stoneyetts had been discontinued outside the actual boundaries of the institution itself and this ground had reverted to Woodilee Farm, together with a small area on the West side of the institution but within the institution grounds. Recently this last mentioned piece of ground was re-transferred, to be cultivated by the inmates as an extension of the kitchen garden. As re-measured recently by the City Engineer's staff, the area of ground now allotted to Stoneyetts, including the site of the institution itself, recreation grounds, and kitchen garden, extends to 41.39 acres, as against the over 52 acres shown above (it may be explained that the ground occupied by Stoneyetts Institution formed part of an area purchased in 1902 as an extension of the Woodilee Estate).

At the date of transfer of the institutions to the Corporation a reclamation scheme was in progress on the Gartloch Estate. This ground has, in the interval, also been brought under cultivation. The areas under cultivation, and otherwise shown above, fall to be modified in respect of these and other minor changes, when the necessary measurements have been made.

Farm Lands.—The following table shows approximately the areas of land now under cultivation or in pasture, at the farms associated with the three mental hospitals, together with a rotation of crops for the current year :—

Crop.				Woodilee. Acres.	Gartloch. Acres.	Hawkhead. Acres.
Hay,	...	...	...	116½	116½	54
Oats,	...	...	...	77	22	24
Potatoes,	...	...	...	52¾	13½	6
Silage,	...	...	...	31	32½	—
Turnips,	...	...	...	22	5	8
Cabbage,	...	...	...	5	2	—
Wheat,	...	...	...	13	8½	6
Pasture,	...	...	...	424	107	133½
				741¼	306¾	231½

Crops.—The average yield per acre of the crops, as above, works out as follows :—

Crop.				Yield per Acre.			
	Tons.	Cwts.			Tons.	Cwts.	
Hay,	...	2	5				
Oats—Grain,	...	—	17	Straw,	...	1	15
Potatoes,	...	8	—				
Silage—Green,	...	24	—	After maturing in			
Turnips,	...	20	—	silo,	...	8	—
Cabbage,	...	25	—				
Wheat—Grain,	...	1	—	Straw,	...	2	—

Herds, etc.—While the herds at the Hawkhead farms had been free from tubercle for a number of years, it was not until 1927 that the Glasgow District Board of Control decided to have tubercle free herds at Woodilee and Gartloch farms, an application of the Tuberculin Test at that time to the existing herds having shown that almost all the animals were re-actors. The building up of tubercle free herds had not been completed in May, 1930, when the farms were transferred to the Corporation, but this was accomplished during the financial year 1930-31, since when only two animals have been purchased. The number of animals in the herds at the various farms are, at present, as follows :—

	Woodilee.	Gartloch.	Hawkhead.	Total.
Number of cows in milk, ...	107	55	82	244
Number of other milch stock, ...	200	104	94	398
Number of calves on milk, ...	30	11	26	67
	337	170	202	709

A number of the cattle included under Gartloch and Hawkhead are at present being grazed at Hazeltonhead Farm, Mearnskirck.

Compared with Hawkhead there would appear to be an excessive number of cows not in milk at Woodilee and Gartloch. This is explained by the fact that the Hawkhead herd is mainly an adult one, whereas at the other farms heifers are being retained with a view to obtaining an increased and more regular distribution of milk supplies throughout the year. An outbreak of contagious abortion in the Gartloch herd has also retarded the growth of the milk supply from that farm.

Out of a total of 115,878 gallons of milk taken by Stobhill Hospital during the calendar year 1932, 64,057 gallons were supplied under contract as against 51,821 gallons from Woodilee and Gartloch Farms, the farms being able to meet the whole requirements at Stobhill during the month of June only. As the maximum demand is made upon the contractor during the winter months, when supplies are at their lowest, a higher rate per gallon is paid for the Stobhill supplies than prevails at other institutions.

At Woodilee there are also 658 sheep and lambs. No pigs or fowls are kept at either Woodilee or Gartloch, but at the Hawkhead farms there are 117 pigs, 450 cocks and hens, 413 chickens, 24 ducks, and 5 turkeys. The number of horses at the farms is 33, of which 21 belong to Woodilee, 5 to Gartloch, and 7 to Hawkhead.

Valuation of Stock, etc.—The inventories and valuations of the live stock, current crops, feeding stuffs, plant, implements and utensils, etc., as at 31st May, 1932, were as follows :—

Woodilee,	...	...	...	...	...	£12,313
Gartloch,	...	...	...	...	...	6,055
Hawkhead,	...	...	...	...	...	7,102
A total of						<u>£25,470</u>

Produce.—Besides the crops used for feeding, etc., by the farms themselves, farm and dairy produce has been supplied from the farms as follows :—

(a) *Milk.*

During the year ended 31st May, 1932, milk was produced at the farms and distributed as follows :—

	Woodilee Gallons.	Gartloch Gallons.	Hawkhead Gallons.	Total Gallons.
To institution,	51,992	39,580	39,729	131,301
Sold to employees,	1,580	3,136	3,233	7,949
Employees' emoluments,	1,147	832	1,277	3,256
Feeding calves,	7,709	2,606	3,641	13,956
To Stobhill Hospital,	31,210	12,240	—	43,450
To Gartloch Mental Hospital,	1,263	—	—	1,263
To Southern General Hospital,	—	—	14,510	14,510
	<u>94,901</u>	<u>58,394</u>	<u>62,390</u>	<u>215,685</u>

The farms are given credit for the milk produced by them at the lowest rate being paid to any private contractor or producer for Grade "A" (T.T.) milk supplied to any other institution. For the financial year 1931-32 this rate was 1s. 3d. per gallon; for the year 1932-33, 1s. 2d. per gallon; while for the year 1933-34 it will be 1s. $\frac{1}{2}$ d. per gallon.

(b) *Potatoes.*

During the financial years 1930-31 and 1931-32, potatoes produced were distributed as follows :—

<i>Year 1930-31—</i>	Woodilee. Tons.		Gartloch. Tons.		Hawkhead. Tons.		Total. Tons.	
To institution,	125	£423	45	£152	76	£281	246	£856
To Stobhill Hospital, ...	115	388	—	—	—	—	115	388
To Stoneyetts Institution,	37	125	—	—	—	—	37	125
	277	£936	45	£152	76	£281	398	£1,369

<i>Year 1931-32—</i>	Woodilee.		Gartloch.		Hawkhead.		Total.	
To institution,	76	£462	—	—	12	£73	88	£535
To Stobhill Hospital, ...	—	—	—	—	—	—	—	—
To Stoneyetts Institution,	17	106	—	—	—	—	17	106
To Gartloch Mental Hospital,	4	25	—	—	—	—	4	25
	97	£593	—	—	12	£73	109	£666

Owing to the extremely wet season the potato crop for the year 1931-32 failed entirely at Gartloch, the fields having been submerged three times, while the crop at Hawkhead was only about a seventh of the previous year's crop, and at Woodilee only slightly more than half, although a greater acreage had been planted. Here again the farms are credited with the same rates per ton as are paid to contractors throughout the year, and, while the average price for the year 1931-32 was £6 2s. per ton as against the average of £3 8s. per ton in the preceding year, there was substantial loss to the Department in respect that the high price had to be paid for the greater quantity of potatoes which had to be purchased from contractors because of the reduced supplies from the farms. The area planted with potatoes has been increased for the present season, while additional supplies will be available from Hazeltonhead.

Mutton.—From Woodilee Farm mutton has been supplied to Woodilee Mental Hospital as follows :—

Year.	Quantity (lbs.)	Value.
1930-31	5,539	£253 17 5
1931-32	7,722	353 18 6

The price credited to the farm for mutton supplied to the institution is based upon the prices paid to contractors for supplies to other institutions.

Pigs.—No pigs are killed at Hawkhead but these are sold, either as young or fattened pigs, by auction or private bargain.

Eggs.—At Hawkhead eggs were produced and distributed as follows :—

				1930-31.		1931-32.	
				Hen. Doz.	Duck. Doz.	Hen. Doz.	Duck. Doz.
Used at farm,* ... ..	...	...	...	95	—	103	—
Sent to institution, ... ..	...	...	...	4,851	213	5,731	321
Sold, ... ..	...	...	...	8	—	8	—
Retained for hatching, ... ..	...	...	...	81	8	93	—
Preserved, ... ..	...	...	...	604	—	350	—
				5,639	221	6,285	321

* Manager's emoluments now discontinued.

Fowls.—At Hawkhead fowls were also disposed of during the year as follows :—

					1930-31.		1931-32.	
					To Institution.	Sold.	To Institution.	Sold.
Hens,	...	...	...	...	5	220	16	219
Chickens,	...	...	...	...	326	48	278	46
Ducks,	...	...	...	...	41	51	53	9
Turkeys,	...	...	...	...	20	31	17	9
Cocks and Drakes,	...	...	...	...	—	7	—	—
					392	357	364	283

Sales of fowls were made at current rates to members of the institutional staff and their friends, and to poulterers in the City. The practice of selling fowls to members of the staff and their friends has now been discontinued.

Finance.—Under the former system of accounting, receipts and payments from the institution gardens and from the farms were combined. Appendix Table 1 contains a summary of these accounts for each of the ten years from 1919-20 till 1928-29.

At Woodilee, excepting the year 1924, there was a net surplus until 1928 and deficits in each of the three years thereafter. At Gartloch there were surpluses till 1922-23 and deficits in each year thereafter. At both farms the increasing deficits during the years 1926-27 to 1928-29 are mainly to be attributed to the expenditure incurred in the purchase of stock following the decision of the District Board of Control to create tubercle free herds.

At Hawkhead farm surpluses were recorded in each year excepting 1925-26 and 1927-28. Here, as previously mentioned, the herd was already a tubercle free one, so that there were no large purchases of stock in these years.

In the financial year 1929-30, expenditure and revenue from Woodilee and Gartloch farms were combined, expenditure in connection with the institutional gardens being excluded. The Hawkhead accounts, however, still included garden expenses, but taking the figures as published, the following summary is obtained :—

					Woodilee and Gartloch.	Hawkhead.
Stock at beginning of year,	...	...	...	...	£14,542	£7,578
Add payments,	...	...	...	...	23,151	5,828
					£37,693	£13,406
Receipts,	...	...	...	...	£13,465	£6,720
Add stock at end of the year,	...	...	...	...	18,151	7,601
					£31,616	£14,321
Net surplus,	...	...	...	...	—	£915
Net deficit,	...	...	...	...	£6,077	—

With the transfer of the functions of the former District Boards of Control to the Corporation, the farm accounts were again stated separately, garden expenses being excluded in all cases and treated as a charge against the institution itself. The accounts at the three farms in each of the succeeding years may be summarised as follows :—

Year 1930-31—					Woodilee.	Gartloch.	Hawkhead
Stock at beginning of year,	...	...	...	...	£11,449	£6,702	£7,601
Payments,	...	...	...	...	12,573	5,517	5,963
					£24,022	£12,219	£13,564
Receipts,	...	...	...	...	£7,453	£4,022	£5,647
Stock at end of year,	...	...	...	...	11,693	5,988	7,445
					£19,146	£10,010	£13,092
Net surplus,					—	—	—
Net deficit,					£4,876	£2,209	£472
Year 1931-32—							
Stock at beginning of year,	...	...	...	...	£11,693	£5,988	£7,445
Payments,	...	...	...	...	11,063	5,024	4,867
					£22,756	£11,012	£12,312
Receipts,	...	...	...	...	£8,135	£4,122	£5,587
Stock at end of year,	...	...	...	...	12,313	6,055	7,102
					£20,448	£10,177	£12,689
Net surplus,					—	—	£377
Net deficit,					£2,308	£835	—

At Hawkhead no extraordinary expenses were incurred in either year, although, for the first time, these farms had been debited with rent. Had such a charge been made in previous years, the surpluses recorded would either have been reduced to nominal figures or converted into actual deficiencies. Since the "boom" period, which ended in 1922, the Hawkhead farms have no more than paid their way.

The deficits at Woodilee and Gartloch in the year 1930-31 are attributable to the purchase of stock and, in 1932, to special expenditure in the alteration of existing byres and the provision of additional accommodation, while extra staff had been engaged to deal with the increased herd before there was a compensating revenue from sales. These deficits were also exaggerated by the circumstance that the official valuator, appointed by the Corporation to value the farm stocks, chose to value the herds at ordinary market prices and not at the increased values which might be placed upon tubercle free stock.

It is anticipated that the farm accounts will show much more satisfactory results at the close of the present financial year, but the analysis which has been made of the accounts of past years serves to show that only a person or a Corporation with substantial capital resources can face the expenditure involved in the creation of a large tubercle free herd. Indeed, much of the expenditure which, since 1927, has been charged against the revenue and expenditure accounts at Woodilee and Gartloch should have been regarded as capital expenditure, or at any rate spread over the accounts of several years.

Staff.—Besides Mr. Bankier, who is now in charge of all the farms, the staffs are as follows :—

	Woodilee.	Gartloch.	Hawkhead.
Assistant Manager, ...	1	—	1
Dairymaids, ...	1	1	1
Poultrymaid, ...	—	—	1
Byremen, ...	4	3	3
Ploughmen, ...	6	3	2
Van or motor drivers, ...	1	—	1
Shepherd, ...	1	—	—
Farmworkers, ...	11	2	—
Milkers, ...	5	5	4
	30	14	13

At Mearnskirk two farmworkers have meantime been seconded from Gartloch, to raise crops for feeding purposes and look after the animals from Hawkhead and Gartloch at present being grazed there. There is no assistant manager at Gartloch, this farm being under the immediate supervision of the Manager, assisted by a head byreman and a head ploughman. At Woodilee and Gartloch wages as fixed in former years by the Glasgow District Board of Control were generally in excess of the district rates, in some cases substantially so, although the large numbers of animals in these herds may have justified the payment of higher wages. Employees here were also granted twelve days holiday per annum if required to work on Saturday afternoons, and eight days if free on Saturday afternoons. With certain exceptions, the farm employees at Hawkhead were engaged on district conditions.

At the farms belonging to other departments of the Corporation (Water and Cleansing Departments) employees are engaged according to district rates and conditions; generally speaking, the employees at the mental hospital farms have more favourable terms, more especially ploughmen who in some cases receive 10s. per week over district rates. The remuneration of all these workers will, however, fall to be considered by the Conditions of Service Committee before the end of the present year, when wages generally throughout the Corporation service are to be re-considered.

OCCUPATION OF PATIENTS IN MENTAL HOSPITALS.

In each of the mental hospitals it is the aim of the medical superintendent to provide employment of one kind or another for all patients, suited to their physical or mental capacity. The ordinary routine of the institution enables considerable numbers to be usefully employed either at indoor or outdoor occupations. How far this ideal is attained in practice is shown by the special daily returns kept by each of the superintendents. The number of patients

employed and the varieties of work in which they are engaged in each institution are shown in the following tabular statement :—

	Woodilee.			Hawkhead.			Gartloch.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
Number of patients, ...	662	546	1,208	495	395	890	438	394	832
Not employed owing to mental or physical infirmity, ...	263	235	498	231	224	455	231	210	441
Industrially employed, ...	399	311	710	264	171	435	207	184	391
<i>Principal Occupations—</i>									
Cleaning and household work in wards only, ...	272	147	419	90	5	95	90	42	132
Garden or field workers, ...	56	—	56	98	—	98	62	—	62
Farm workers, ...	44	—	44	32	—	32	21	—	21
Kitchen or dining hall, ...	—	21	21	6	21	27	16	24	40
Laundry, ...	—	32	32	—	17	17	—	32	32
Needlework and knitting, ...	—	104	104	—	122	122	—	63	63
Rug and chair making, etc., ...	—	—	—	14	—	14	—	—	—
Variously employed as— stokers, bakers, tailors, shoe-makers, upholsterers, painters, joiners, plumbers, masons, slaters, etc., ...	16	—	16	13	—	13	9	—	9
Clerical work, messengers, and in other ways unspecified, ...	11	7	18	11	6	17	9	23	32
Totals, ...	399	311	710	264	171	435	207	184	391

The table shows that a very considerable proportion of the inmates in each institution is unemployable because of mental or physical infirmity, or both. Many of them are in fact quite helpless and incapable. The numbers returned as industrially employed in one way or another are considerable, and the nature of the work allotted to them depends upon their mental or physical condition and the degree to which they may require to be under observation, while allowance has to be made for a number of patients who from time to time refuse to perform the tasks assigned to them.

At Hawkhead there are two workshops, one for men and one for women, situated under the solarium. At the time of the survey 14 men and 20 women were working there, but the accommodation could provide for more of each sex. The principal industries are rug-making, basket and chair making, and woodwork of various kinds for the male patients, while the female patients are engaged in needlework, knitting, sewing, mending, etc. This has proved to be a useful provision, as female patients often prefer to do fancy work of this kind, while some of the men who object to outside work are in this way provided with congenial occupations.

Under the heading of farm workers it may be observed that 44 are so employed at Woodilee, 32 at Hawkhead, and 21 at Gartloch. Accommodation for patients in the form of farm colonies is provided as follows. At Woodilee there are 50 beds at the home farm, 37 at West Muckcroft, and 16 at East Muckcroft. At Gartloch farm colony there are 79 beds, of which 59 are occupied and 17 are vacant owing to the fact that suitable patients are not available in the institution. At Hawkhead the colony has accommodation for 22 patients.

Under the heading of garden or field workers the numbers are 56 at Woodilee, 98 at Hawkhead, and 62 at Gartloch. While at certain times, *e.g.*, during harvest, some of the latter group may be employed temporarily at farm work, it may be pointed out that the garden or field workers are, generally speaking, engaged in looking after the grounds and policies of the institution itself, apart from the work of the farm proper. The large extent of the policies at each institution affords very considerable scope for outdoor employment.

There has been a decided decline in the numbers occupied in farm work during the last twenty or twenty-five years. For instance, in Woodilee there were at one time some 300 to 400 inmates working on the farms and garden, while in recent years the number of employable patients generally has fallen by at least 50 per cent. At Gartloch in former years as many as 100 patients have been employed in the gardens and 30 at the farm. The main factors in these reductions have been the decreased number of admissions and the preponderance among the admissions of a more chronic and helpless type of patient, largely due to the increasing facilities for treatment without certification, of patients in the observation wards of the general hospitals. It is a matter of experience that the number of patients capable of being employed on farm work as such is becoming more limited, relative to the total number of patients. For example, it has been pointed out that vacant beds exist in the farm colony at Gartloch, while a considerable proportion of those housed in the colonies at Woodilee are unfit for outdoor occupation. Indeed, the farms could provide employment for many more patients, if they were available.

SUMMARY.

(1) The farm lands (other than the portions occupied by buildings or used as pleasure and garden grounds) of the three mental hospitals comprise approximately 741 acres at Woodilee, 307 at Gartloch, and 231 at Hawkhead. The report contains data regarding the acreage devoted to cultivation and to pasture. All the farms produce Grade "A" (T.T.) milk, and the herds contain 709 animals in the aggregate.

(2) The financial position is detailed, and the statement given covers a series of years during which considerable expenditure was entailed in perfecting the production of Grade "A" (T.T.) milk. The annual expenditure may now be regarded as much more stabilised.

(3) These farms have thus developed much beyond their original function as adjuncts to the mental institutions for the purpose of providing useful and congenial occupation for patients. They have become, to a large extent, productive enterprises, and questions of management, production, and finance are now of primary importance.

(4) The number of patients judged by the medical superintendents to be capable of working on the farms has declined in recent years for reasons given in the report. At present the numbers are 44 at Woodilee, 32 at Hawkhead, and 21 at Gartloch. At certain times, *e.g.*, during harvest, some of the garden or field workers are employed temporarily at farm work.

(5) The report indicates that the occupational employment of patients is widely catered for in each institution, apart from the comparatively small numbers directly engaged on farm work. These and similar occupations are capable of further development in substitution for employment on the farms. For the adequate provision of outdoor work large policies are required in connection with mental hospitals.

RECOMMENDATIONS.

(1) I am of opinion that, having regard to the functions which these farms now perform as dairy farms, they should be administered as such jointly and not as separate units, and that the medical superintendents should not be made responsible for their management and finance as productive enterprises.

(2) This must not interfere with the function of the medical superintendent, in co-operation with the farm manager or his deputy, to ensure that as many patients as he considers desirable should be provided with suitable occupation on the farms under such arrangements as to nature of work, supervision, and other matters as may be advisable. For these purposes the farm manager, or his deputy, would, as at present, be responsible to the medical superintendent. When employed out-of-doors in groups, patients are, of course, always in the charge of an attendant.

(3) If the above suggestions are approved in principle, these details could be adjusted later.

(4) It might be considered whether, in view of the position which the farms now occupy as productive enterprises, their administration should stand referred to a special sub-committee of the Sub-Committee on Mental Services, to include the farms at Woodilee, Gartloch, and Hawkhead, and also the extension of the latter at Mearnskirck.

A. S. M. MACGREGOR,
Medical Officer of Health.

The final adjustment of details in connection with the administration of the farms is still under consideration.

MENTAL OBSERVATION WARDS.

The mental observation wards at Stobhill, Eastern District and Southern General Hospitals have continued to be taxed to their utmost capacity throughout the year. These wards are provided for the treatment without certification and on a voluntary basis of cases of incipient insanity and mental disturbance, and are located in the general hospitals to allow of all the facilities of the modern general hospital being readily available in the investigation of each individual case. Owing to the numbers of cases of senile dementia exhibiting a degree of confusion and restlessness for whom no other suitable accommodation is available, and also to the numbers of mental defectives for whom accommodation in certified institutions is not at present available, the wards have been hampered very considerably in fulfilling their proper function; however, reference to the appended table will demonstrate the extent to which they have been utilised and their usefulness, not only in avoiding the stigma of certification in many cases, but in promoting recovery and return to civil life in many others.

A considerable handicap in the efficient treatment of certain cases is caused through incomplete or inaccurate knowledge of the domestic conditions from which these patients have come. Unhappiness, friction and misunderstandings in the home environment frequently account for the breakdown necessitating admission to hospital, and, while the patient may do well under hospital routine and discipline, on discharge he or she returns to the old environment with all its disturbing potentialities. Every effort is made by the staff of the wards to obtain accurate information in each case but the information obtained is frequently unreliable and conflicting, and must of necessity remain so unless some method of obtaining more accurate information be adopted. It has been found by experience in other places that a social worker working in conjunction with the medical staff has greatly enhanced the value of the treatment in cases of this class. The more accurate histories obtained at the patients' own homes, where all the attendant factors can be better assessed, naturally lead to a clearer understanding of the illness and tend to facilitate the readjustment of the patients. Not only is the investigation of each case important, but the re-education of the patient and his relatives on his discharge from

hospital is of equal importance in order to avoid a recurrence of the illness. This could be done by a social worker who would thus form a nucleus for the after-care of patients on their discharge not only from the observation wards of the general hospitals but also from the mental hospitals. Considerable expense might thereby be saved in preventing readmissions to hospital.

During the year 1,921 cases were treated, and of these 1,012, or roughly 50 per cent., were discharged recovered, or greatly improved. The number of deaths appears relatively large, but it must be remembered that a large proportion of the deaths occurred amongst old people and those who were admitted to the wards in the delirium of death from other causes than mental disease. About 22 per cent. of the cases treated required certification and removal to mental hospitals.

The types of cases treated in the wards at Stobhill Hospital throughout the year were as follows:—

Senility,	152
Schizophrenia,	146
Delusional Insanity,	99
States of Depression,	98
States of Confusion,	93
Mental Defectives,	74
General Paralysis,	55
Mania,	53
Alcoholism,	45
Suicidal attempts,	38
Epilepsy,	37
Neurosyphilis,	33
Neurasthenia,	23
Melancholia (Hypochondriacal and Agitated),	22
Manic Depressive Psychoses,	22
Diseases of Ductless Glands,	22
Arterio-sclerosis,	20
Mental Disorder associated with Puerperium,	18
Dementia,	12
Moral Defectives,	8
Hysteria,	8
Post Encephalitis Lethargica,	7
Paranoia,	5
Mental Disorder associated with Pregnancy,	5
Paraphrenia,	3
Cerebro-spinal Meningitis,	2
Tuberculous Meningitis,	2
Drug Addiction,	2
Huntington's Chorea,	1
Banti's Disease,	1
Spastic Paraplegia,	1

Under the heading of suicidal attempts are included only those cases who had definitely attempted suicide whether by drowning, gassing, poisoning, cut throat or other injury. Many of these attempts were made on impulse during a state of temporary depression, and after treatment in the wards a large proportion of them recovered and were allowed to go home.

The following table shows the number of cases treated in the observation wards during the year and their disposal:—

MENTAL OBSERVATION WARDS.

	Stobhill.			Eastern District.			Southern General Hospital.			* Total.					
	M. F. Total.			M. F. Total.			M. F. Total.			M. F. Total.					
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.			
Remaining at 31st December, 1932,	93	89	182	25	23	48	12	6	18	130	118	248
Admitted during 1933,	594	515	1,109	267	166	433	64	67	131	925	748	1,673
Number treated during year 1933,	687	604	1,291	292	189	481	76	73	149	1,055	866	1,921
Number discharged home or transferred to Poorhouse during 1933,	390	322	712	142	76	218	45	37	82	577	435	1,012
Number died during 1933,	82	60	142	31	22	53	4	6	10	117	88	205
Number removed to Asylum,	125	120	245	95	65	160	14	20	34	234	205	439
Number remaining as at 31st December, 1933,	90	102	192	24	26	50	13	10	23	127	138	265

The Mental Hospitals at Gartloch, Woodilee, and Hawkhead have continued to fulfil their functions throughout the year, and in the following tables will be found the details:—

TABLE I.
SHOWING ADMISSIONS, DISCHARGES, AND DEATHS IN THE MENTAL HOSPITALS DURING THE
YEAR ENDED 31ST DECEMBER, 1933.

	Gartloch.			Woodilee.			Hawkhead.			Totals.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
On Register at 31st December, 1932, ...	437	395	832	683	547	1,230	502	398	900	1,622	1,340	2,962
Number of Cases admitted during the year, ...	94	76	170	52	50	102	96	52	148	242	178	420
Total Cases under care during the year, ...	531	471	1,002	735	597	1,332	598	450	1,048	1,864	1,518	3,382
Cases discharged and died during the year—												
Recovered, ...	8	24	32	11	7	18	34	27	61	53	58	111
Not Recovered, ...	7	13	20	9	9	18	3	3	6	19	25	44
Died, ...	27	24	51	49	35	84	29	20	49	105	79	184
Transferred to other Institutions in Scotland, and boarded-out in private dwellings, ...	29	4	33	11	2	13	33	3	36	73	9	82
Total Cases discharged and died during the year,	71	65	136	80	53	133	99	53	152	250	171	421
Total Cases on Register at 31st December, 1933, ...	460	406	866	655	544	1,199	499	397	896	1,614	1,347	2,961

TABLE III.

SHOWING THE FORMS OF MENTAL DISORDER IN THE ADMISSIONS, RECOVERIES, AND DEATHS IN THE MENTAL HOSPITALS DURING THE YEAR 1933.

Forms of Mental Disease.	Admissions.			Recoveries.			Deaths.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
<i>Inherent Developmental Defects—</i>									
Mental Deficiency—									
(a) Idiocy,	2	1	3	—	—	—	2	—	2
(b) Imbecility,	7	4	11	2	—	2	1	1	2
(c) Feeble mindedness,	3	3	6	1	2	3	2	3	5
(d) Moral Imbecility,	—	2	2	—	1	1	—	—	—
Epileptic Insanity,	10	9	19	—	2	2	5	7	12
Schizophrenia—									
(a) Simple,	22	3	25	5	5	10	4	6	10
(b) Hebephrenic,	37	17	54	4	4	8	2	1	3
(c) Katatonic,	9	4	13	—	1	1	2	—	2
(d) Paranoid,	8	10	18	2	—	2	5	2	7
Paraphrenia,	6	10	16	1	4	5	—	1	1
Paranoia,	5	6	11	—	2	2	4	6	10
Psychoneurosis—									
(a) Neurasthenia,	—	—	—	—	1	1	—	—	—
(b) Psychasthenia,	—	—	—	—	—	—	—	—	—
(c) Hysteria,	—	—	—	—	—	—	—	—	—
<i>Toxic and Confusional Psychosis—</i>									
Manic Depressive Psychosis,	46	26	72	24	14	38	22	10	32
Acute Delirium,	4	11	15	—	—	—	2	2	4
Acute Confusion,	4	9	13	3	15	18	1	2	3
Stupor,	—	—	—	—	—	—	—	—	—
Alcoholic Insanity—									
Delirium Tremens,	—	—	—	—	—	—	—	—	—
Mania a Potu,	—	—	—	—	—	—	—	—	—
Korsakoff's Psychosis,	—	1	1	—	—	—	—	—	—
Chronic Alcoholic Insanity,	12	2	14	3	—	3	4	—	4
Cocaine, Morphine, and other Drug Insanities,	—	—	—	—	—	—	—	—	—
Involuntional Psychosis,	7	13	20	1	6	7	1	—	1
<i>Acquired Defects—</i>									
Pre-senile Psychosis,	5	2	7	2	—	2	7	—	7
Senile Dementia—									
(a) Simple,	9	13	22	—	—	—	17	18	35
(b) With Mania,	1	5	6	—	—	—	2	3	5
(c) With Depression,	1	4	5	—	—	—	1	1	2
(d) With Presbyophrenia,	—	—	—	—	—	—	—	—	—
General Paralytic Dementia,	24	12	36	4	1	5	9	16	15
Traumatic Dementia,	—	1	1	—	—	—	2	—	2
Organic Dementia—									
(a) Tumour,	—	—	—	—	—	—	—	—	—
(b) Gumma,	2	—	2	—	—	—	—	2	2
(c) Arterio-Sclerosis,	8	4	12	—	—	—	4	7	11
(d) Meningitis,	—	—	—	—	—	—	1	—	1
(e) Encephalitis,	8	2	10	1	—	1	1	—	1
(f) Other Cerebral Diseases,	2	4	6	—	—	—	4	1	5
	242	178	420	53	58	111	105	79	184

TABLE IV.—SHOWING CAUSES OF DEATH WITH AGES AT DEATH IN THE MENTAL HOSPITALS
DURING THE YEAR ENDED 31ST DECEMBER, 1933.

Disease.	Males.										Females.										Grand Total.															
	—20					—30					—40					—50						—60					—70					Total.				
	—20	—30	—40	—50	—60	—70	—80	—90	—100	Total	—20	—30	—40	—50	—60	—70	—80	—90	—100	Total		—20	—30	—40	—50	—60	—70	—80	—90	—100	Total					
<i>Diseases of the Nervous System—</i>																																				
Organic Brain Disease, ...	1	1	1	2	2	2	—	—	—	9	—	—	2	2	2	4	—	—	—	10	1	1	2	2	2	4	—	—	—	10	19					
General Paralysis of the Insane, ...	—	—	2	6	2	—	—	—	—	10	1	1	1	1	2	—	—	—	6	16	—	—	—	—	—	—	—	—	—	—	6	16				
Cerebral Hæmorrhage, ...	—	—	—	—	1	3	4	—	—	8	—	—	—	—	1	2	1	4	12	12	—	—	—	—	—	—	—	—	—	—	4	16				
Epilepsy, ...	—	—	1	1	—	—	—	—	—	2	—	—	—	1	3	—	—	—	4	4	—	—	—	—	—	—	—	—	—	—	4	6				
Acute Delirium, ...	—	—	—	—	1	—	—	—	—	1	1	1	—	—	—	—	—	—	2	3	—	—	—	—	—	—	—	—	—	2	3	3				
Huntington's Chorea, ...	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	1	2	2				
Acute Confusion, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1				
<i>Diseases of the Circulatory System—</i>																																				
Cardio-vascular Degeneration, ...	—	—	1	3	2	6	7	—	—	19	—	—	—	1	2	1	3	7	26	26	—	—	—	—	—	—	—	—	—	—	—	—	—			
Valvular Disease of the Heart, ...	—	—	—	—	—	2	2	—	—	4	—	—	1	—	1	1	3	6	10	10	—	—	—	—	—	—	—	—	—	—	—	—	—			
Mycarditis, ...	—	—	—	—	—	2	—	—	—	2	—	—	—	—	—	—	—	—	2	2	—	—	—	—	—	—	—	—	—	—	—	—				
Arterio-sclerosis, ...	—	—	—	2	1	1	—	—	—	4	—	—	—	—	—	—	—	—	4	4	—	—	—	—	—	—	—	—	—	—	—	—	—			
Syncope, ...	—	—	1	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
<i>Diseases of the Respiratory System—</i>																																				
Acute Lobar Pneumonia, ...	—	—	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Broncho Pneumonia, ...	—	1	2	2	2	1	—	—	—	8	—	—	2	1	2	1	3	9	17	17	—	—	—	—	—	—	—	—	—	—	—	—	—			
Chronic Bronchitis and Asthma, ...	—	—	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Pulmonary Tuberculosis, ...	1	1	2	1	1	—	1	—	—	7	1	1	—	3	—	—	—	—	12	12	—	—	—	—	—	—	—	—	—	—	—	—				
Hypostatic Pneumonia, ...	—	—	—	—	2	2	—	—	—	4	—	—	—	—	2	—	3	5	9	9	—	—	—	—	—	—	—	—	—	—	—	—				
<i>Diseases of the Alimentary System—</i>																																				
Carcinoma, ...	—	—	1	1	1	2	1	—	—	6	—	—	—	—	—	2	—	—	8	8	—	—	—	—	—	—	—	—	—	—	—	—				
Gastric Ulcer, ...	—	—	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Intestinal Obstruction, ...	—	—	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Acute Enteritis, ...	—	—	1	—	1	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Chronic Enteritis, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
<i>Diseases of the Genito-Urinary System—</i>																																				
Chronic Nephritis, ...	—	—	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
<i>General Diseases—</i>																																				
Senile Decay, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Non-Pulmonary Tuberculosis, ...	—	—	1	—	—	—	5	—	—	5	—	—	—	—	—	1	11	12	17	17	—	—	—	—	—	—	—	—	—	—	—	—				
Adenitis and Cellulitis, ...	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Debility and Malnutrition, ...	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Streptococcal Septicæmia, ...	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	2	2	—	—	—	—	—	—	—	—	—	—	—	—				
Fracture of Ribs, ...	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—				
Influenza, ...	—	—	—	—	1	1	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Carcinoma of Breast, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
Catarrhal Jaundice, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
	3	3	14	20	20	25	20	105	3	3	8	11	17	12	25	79	184																			

TABLE V.

SHOWING THE PROBABLE CAUSES OF INSANITY IN THE PATIENTS
ADMITTED TO THE MENTAL HOSPITALS DURING YEAR ENDED
31st DECEMBER, 1933.

Etiological Factors.	Males.	Females.	Total.
1. Mental Stress,	22	35	57
2. Adolescence,	33	3	36
3. Pregnancy,	—	1	1
4. Puerperium,	—	5	5
5. Climacteric,	4	15	19
6. Senility,	9	22	31
7. Bodily Ill-health and Exhaustion,	43	8	51
8. Alcoholism,	27	9	36
9. Syphilis,	28	13	41
10. Constitutional Inferiority, ...	15	20	35
11. Organic Brain Disease,	6	7	13
12. Epilepsy,	7	9	16
13. Disorders of Ductless Glands, ...	—	1	1
14. War Strain,	4	—	4
15. Congenital,	13	9	22
16. Encephalitis Lethargica,	8	2	10
17. Injury,	4	1	5
18. Previous Attack,	3	6	9
19. Huntington's Chorea,	1	—	1
20. Acute Infective Illness,	1	1	2
21. Deprivation of Special Senses, ...	—	2	2
22. Unascertained,	14	9	23
	242	178	420

In connection with this table, it should be borne in mind that in the causation of every mental illness there are many factors, each and all of which may have a distinct influence in precipitating the mental disorder. Such factors as personality, domestic and economic conditions, state of bodily health, and many others must be considered when assessing the probable cause of the condition. In this table the cause assigned in each case, although merely one of many factors, has been adjudged to have had an important bearing on the development of the illness.

Under the heading "mental stress" are included such conditions as domestic or business worries, adverse circumstances, &c., while under "bodily ill-health" are included malaria, influenza, gastric troubles, rheumatism, and the like.

TABLE VI.
SHOWING NUMBERS ADMITTED TO GLASGOW MENTAL HOSPITALS AND THE CHANNELS THROUGH WHICH
THEY WERE ADMITTED DURING THE YEARS 1931-33.

Admitted From.	Gartloch.						Hawkhead.						Woodilee.														
	1931.		1932.		1933.		1931.		1932.		1933.		1931.		1932.		1933.										
	M. F.	T.	M. F.	T.	M. F.	T.	M. F.	T.	M. F.	T.	M. F.	T.	M. F.	T.	M. F.	T.	M. F.	T.									
Observation Wards, ...	43	51	94	27	61	88	66	61	127	43	43	86	84	58	142	76	34	110	70	48	118	56	35	91	46	43	89
Home, Police Stations, Infirmary, etc., ...	7	8	15	1	8	9	8	10	18	27	27	54	12	14	26	10	14	24	6	2	8	4	8	12	3	6	9
Transferred from Other Asylums or Certified Institutions, ...	18	5	23	—	6	6	17	5	22	1	5	6	4	5	9	3	3	6	4	6	10	2	1	3	1	1	2
H.M. Prisons, ...	4	—	4	2	1	3	3	—	3	5	—	5	3	1	4	7	2	9	2	—	2	4	—	4	2	—	2
Totals, ...	72	64	136	30	76	106	94	76	170	76	75	151	103	78	181	96	53	149	82	56	138	66	44	110	52	50	102

GARTLOCH MENTAL HOSPITAL.

The number of patients on the register on the 31st December, 1933, was 866, composed of 460 males and 406 females, showing an increase of 23 males and 11 females compared with the corresponding figures for the 31st December, 1932. 170 patients (94 males and 76 females) were admitted during the year, an increase of 64 compared with the previous year. In the cases admitted, there was a history of addiction to alcohol in 17 males and 7 females, a history of hereditary predisposition to alcohol in 3 males and 12 females, and a history of hereditary predisposition to nervous or mental disease in 8 males and 17 females. 73 males and 56 females were subjects of a first attack of mental disease, and 15 males and 15 females subjects of a second attack. In 6 males and 5 females there was a history of 3 or more attacks. The number of patients discharged recovered was 32, consisting of 8 males and 24 females, as compared with 18 (9 males and 9 females) for the year 1932. The percentage of recoveries, based on the number of admissions, was 31·5 per cent. in the case of females, and 8·5 per cent. in the case of males.

The total number of deaths, viz.:—51 (27 males and 24 females) was the same as in 1931, representing a percentage of 6·01 of the average daily number of patients—848·5. These figures are respectively the lowest and the highest in the history of the institution. The physical health of the patients was, on the whole, very good, and there was an absence of epidemic illness.

Staff Changes.—Mr. Walter Roy Murray, who had been Clerk of Works in the institution since 1905, died in June, after a tedious and painful illness. Mr. Murray will be long remembered, not only on account of his engaging personality, but also because of his whole-hearted and unselfish devotion to the service and best interests of the institution, and his enthusiastic interest in the social life of the community. Mr. Charles Henderson, Head Male Nurse, retired on superannuation allowance on reaching the age limit in August. Mr. Henderson had served the institution for the long period of 36 years. His sterling qualities of head and heart eminently fitted him for the post he held, and his departure from the institution was a matter of universal regret to staff and patients alike. Mr.

Murray was succeeded by Mr. Edward D. Syme, and Mr. Henderson by Mr. Collins, who has been in the service of the institution since 10th March, 1908.

Accommodation.—Owing to the lack of suitable cases, the number of patients in the Farm Colony had fallen during the last few years from 80 to 50, leaving 30 vacant beds, and to meet the urgent demand for hospital accommodation, the temporary expedient was adopted of converting the first floor of that block into a hospital ward for senile and infirm male patients, this being facilitated by the transference of 24 quiet ambulatory cases to the lunatic wards of the Southern General Hospital. The cost of the necessary minor structural alterations was inconsiderable. The converted ward was occupied in November, and has proved adequate and satisfactory. The redistribution of patients thereby permitted, allowed of the admission of 60 fresh male cases over a period of four months.

Kitchens.—The electrical cooking appliances mentioned in last year's report, have continued to function in an entirely satisfactory manner. The average weekly consumption of electrical current was 360 units in the Hospital Kitchen, and 172 units in the Asylum Kitchen.

Nursing Certificates.—During the year 18 female nurses and 2 male nurses passed the Preliminary Examination of the Royal Medico-Psychological Association, and 13 female nurses and 2 male nurses the Final Examination of that Association. 6 female nurses passed the Final Examination of the General Nursing Council for Scotland. Increasing use has been made of the facilities afforded by Stobhill Hospital for special diagnosis and treatment.

In addition to the usual weekly entertainments and the three concerts provided by the Corporation of Glasgow, large parties of patients visited the Kelvin Hall Carnival and Circus, and several Christmas entertainments in the City theatres. During the summer motor bus excursions were provided out of the institution shop funds. In February members of our own nursing staff produced a Scottish Comedy for the entertainment of the patients and staff, and much credit is due to them for their generosity and self sacrifice.

A. M. DRYDEN,
Medical Superintendent.

HAWKHEAD MENTAL HOSPITAL.

The total number of certified patients during the year was 1,048 as compared with 1,033 the previous year. The average number resident was 882.7 as compared with 873.2. The largest number on the register on any day during the year was 895.

Admissions.—Of the 126 patients admitted for the first time 83 were men and 43 women. To these fall to be added 13 men and 9 women who had previously been under treatment as certified patients. No voluntary patients were admitted during the year. The total number admitted is lower than in former years, but this is accounted for solely by reason of limited accommodation.

Service Patients.—The number of Service Patients maintained by the Ministry of Pensions during the year was 40. Dr. Forward, Headquarters Medical Inspector, visited the Service Patients on 19th April, 1934. His official report was highly satisfactory.

Discharges.—Patients discharged recovered numbered 61, i.e. 34 men and 27 women. Calculated upon the total admissions this represents a recovery rate slightly over 41 per cent. Amongst those discharged were 4 patients who had been under treatment for General Paralysis of the Insane. Treatment by improved modern methods has undoubtedly been productive of results undreamed of in this disease, which but a few years ago was regarded as probably the most intractable and fatal of all mental disorders.

Deaths.—The death of 29 men and 20 women occurred in the course of the year.

The general health of the institution has been well maintained. There has been no outbreak of infectious disease amongst the patients and it is particularly gratifying to record that no cases of Enteric Fever have occurred. Indeed, there has been an entire freedom from this disease for 7 years.

Enteric Carriers.—The number of Enteric Carriers under treatment in the special Isolation Hospital is 15, of whom 3 are boarders from other institutions.

Occupational Therapy.—The occupational workshops continue to prove an excellent adjunct to the modes of treatment at our disposal. Useful and stimulating occupation is found there for many patients who are not physically or mentally fit to engage in outdoor occupation as well as for those who refuse to engage in other occupations which savour of ordinary 'work.'

Entertainments.—Throughout the winter, entertainments were provided at least twice weekly in the form of dances, concerts, theatrical performances, and cinematograph entertainments. The latter form of entertainment gave most enjoyment to the largest number of patients and it is hoped that it will be possible in the near future to provide a "Talking" instead of the present Silent Picture Installation. A visit to the Xmas Carnival in the Kelvin Hall was made by 92 patients and 175 were entertained at the Pantomime in the Princess Theatre, and 66 at the Pantomime in the Theatre Royal. Thanks are due to the members of the following Clubs who provided theatrical entertainment during the winter:—The Glasgow Players, The Milngavie Players, Mr. Gibb's Party, The Rutherglen Players, The Manresa Players, The Clement Dramatic Club, The Wedgwood Players, The Carment Dramatic Club, The Drama and Comedy Club, The City Assessor's Dept. Dramatic Club, The Public Health Dept. Dramatic Club, and Gartloch Hospital Dramatic Club.

JAMES H. MACDONALD,

Medical Superintendent.

WOODILEE MENTAL HOSPITAL.

Movement of Population.—The number of patients on the register on 31st December, 1933, was 1,199 (655 males and 544 females), as compared with 1,230 (683 males and 547 females), on 31st December, 1932, or a decrease of 28 males and 3 females. 102 cases were admitted of which number 52 were males and 50 were females, a decrease of 14 men, but an increase of 6 women as compared with the previous year.

The recovery rate was again very low, being only approximately 18 per cent. calculated on the total number of admissions. This is to be accounted for to a large extent by the hopelessly incurable forms of insanity in the majority of those admitted.

18 cases (9 males and 9 females) were discharged as relieved, and 13 (11 males and 2 females) were transferred either to private dwellings or to other establishments. 84 cases (49 males and 35 females) died during the year, compared with 79 (44 males and 35 females) the previous year.

Forms of Mental Disorder.—As already stated the majority of those admitted were suffering from a hopelessly incurable form of insanity or had been insane for a very considerable time prior to admission. Manic depressive psychosis was present in 30 (15 males and 15 females) of the cases admitted, and in a great many of these cases the prognosis was bad. Dementia Præcox in one form or another was the diagnosis in 19 cases (12 males and 7 females).

Senile Dementia in 13 cases,	...	(4 males and 9 females)
General Paralysis in 9 cases,	...	(6 " 3 ")
Paraphrenia in 8 cases, ...	...	(3 " 5 ")
Organic Dementia in 7 cases,	...	(3 " 4 ")
Mental Deficiency in 6 cases,	...	(4 " 2 ")
Epileptic Insanity in 4 cases,	...	(1 " 3 ")

Causes of Mental Disorder.—The outstanding probable factors ascertained to be either the predisposing or exciting causes of the mental breakdown in those admitted were as follows:—

Mental Stress (including domestic or business worry, adverse circumstances and unemployment in ...	...	...	...	...	...	25 cases.
Previous Attacks,	...	...	...	...	...	22 "
Senile Decay,	...	...	...	...	...	13 "
Insane Heredity,	...	...	...	...	...	12 "
Alcohol,	...	...	...	...	...	11 "
Syphilis,	...	...	...	...	...	10 "
Adolescence,	...	...	...	...	...	8 "

Hospitals.—Although the number of admissions was lower than at any time previously, the hospital and observation wards are still very overcrowded, and the following is an extract taken from the Commissioner in Lunacy's report dated 24th January, 1934. "In the male department the hospital and observation wards have 49 beds in excess of the accommodation, and the female wards have 52 beds in excess of the accommodation; that is to say the overcrowding on both sides of the institution is almost 10 per cent of the total number of beds."

General Health.—The general health of the patients and staff has on the whole been good. In December there was a

mild epidemic among the patients of influenza with, at first, symptoms of asylum dysentery. This, however, fortunately turned out to be only a gastric form of influenza, the cases being ill for only a short period.

Service Patients.—On 31st December, 1933, there were 40 ex-service patients on the register, 33 service patients, whose maintenance charge is met by the Ministry of Pensions, and 7 ex-service patients whose maintenance is paid by the General Board of Control from a special Exchequer Grant. During the year 1 patient was admitted direct as a “service” patient, 1 was classified as a “service” patient by the Ministry of Pensions, 1 service patient was discharged recovered, 1 as relieved and 1 died.

Staff.—At the May Examination for the Royal Medico-Psychological Association Certificate 1 attendant and 13 nurses passed the Preliminary Examination, and 8 nurses passed the Final Examination; at the November Examination 1 attendant and 11 nurses passed the Preliminary Examination and 2 nurses passed the Final Examination.

The housing of the nursing staff still calls for urgent attention. The Nurses’ Home is overcrowded and requires a substantial addition to it. This Home was opened in 1904 for 110 members of the female staff; it now accommodates 170 members of the female staff. Many of the married attendants, for whom there are not sufficient houses on the estate, are living in very poor houses outwith the estate. The building of 19 houses on the estate for these men requires the very careful consideration of the Corporation.

General.—Charabanc drives during the summer months, 13 in number, were as usual much enjoyed by the working patients. The usual weekly dances and cinema programmes were held during the winter months. It was found extremely difficult to get decent silent cinema films, but it is to be hoped that “Talkie” installation will be in evidence by next winter. Cricket and football were played in their respective seasons and the three combined concert and dance entertainments were much enjoyed by the patients. A very interesting meeting of the Scottish Division of the Royal Medico-Psychological Association was held here on 17th February, 1933, 32 members of the Association being present.

HENRY CARRE,

Medical Superintendent.

STONEYETTS, LENNOX CASTLE, AND BLINKBONNY CERTIFIED INSTITUTIONS.

The accommodation of Stoneyetts and Blinkbonny has been fully occupied, and Lennox Castle has housed an excess over the licensed number owing to the pressing demands for admission of urgent cases.

			Males.	Females.	Total.
On Register, 31st December, 1932,	...	...	289	263	552
Admissions, ...	...	...	14	12	26
Discharges, ...	...	...	11	7	18
Deaths, ...	...	...	4	8	12
On Register, 31st December, 1933,	...	...	288	260	548

Admissions—

From—

Eastern District Hospital, ...	...	...	2	—	2
Stobhill Hospital, ...	...	...	2	5	7
Caldwell House Certified Institution, ...	...	...	3	—	3
Waverley Park Certified Institution, ...	...	...	—	1	1
Larbert Certified Institution, ...	...	...	2	1	3
Gartloch Asylum, ...	...	...	1	—	1
Barlinnie Prison, ...	...	...	1	—	1
Own Homes, ...	...	...	3	1	4
From other Certified Institutions, ...	...	...	—	4	4

Grade of Mental Defect of Admissions—

Idiots, ...	...	...	—	—	—
Imbeciles, ...	...	...	6	7	13
Feeble-minded, ...	...	...	8	5	13
Moral Imbeciles, ...	...	...	—	—	—

Discharges—

To other Institutions, ...	...	...	6	4	10
Discharged to care of friends, ...	...	...	3	3	6
Discharged on expiry of Certificate, ...	...	...	2	—	2

The general health of patients and staff has been good, and no epidemics of any kind have occurred.

The occupational workshops continue to provide suitable and useful employment for the inmates, and the schools for low grade defectives are proving beneficial in training and education.

The entertainments have been varied and numerous. Parties of patients have greatly appreciated their visits to the Kelvin Hall Carnival and Glasgow Pantomimes during the winter season. The entertainment troupes from each institution have given their performances in rotation, and the outings have been much enjoyed.

The Annual Sports were carried out in August at Stoneyetts, and the patients from Lennox Castle and Blinkbonny also participated in the various events.

Football and bowls continue to be the main forms of outdoor recreation indulged in by the male population.

A Scout and Girl Guide display was held in June, and over 100 patients belonging to the Institution organisations took part.

The electrical frying apparatus has now been installed in the main Kitchen at Stoneyetts, and should prove most useful in further varying the general dietary.

Work on the outdoor Swimming Pool has been commenced and it is hoped that the Pool will be ready for use in the early part of next summer.

Staff.—7 nurses passed the Final Examination of the Royal Medico-Psychological Association, and 3 nurses passed the Preliminary Examination of the General Nursing Council.

MENTAL DEFICIENCY.

By C. G. A. Chislett, Medical Superintendent.

The clinic for the re-survey of cases of mental deficiency, certified by the medical officers of the Education Department of the Corporation as uneducable in special schools and notified to the Public Assistance Department as such, was continued throughout the year. Of a total of 94 cases notified, 63 attended for examination and 3 were placed on the list for domiciliary visitation. In many of the cases who failed to attend, the parents had removed from the address given and no trace could be found. Of the 63 cases examined at the clinic, 46 were recommended for institutional treatment, and in 10 of these the recommendation was considered a matter of urgency. Institutional treatment was considered advisable in these cases, either on account of the mental condition of the defective or on account of unsatisfactory home conditions. 2 cases were recommended for admission to an occupation centre, 14 were recommended for low grade training, while 1 was considered to have improved and was recommended for re-examination at the end of six months.

The cases examined during the period under review were all cases who had been recently certified as uneducable and consequently were all comparatively young. Dr. Chislett, who examined all the cases, concurred in the finding of the School Medical Officer in every case.

